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THE INSECT PEST SURVEY BULLETIN

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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR MAY, 1923

Throughout the greater part of the chinch bug belt the bugs were in flight during the latter part of April and the first week in May. Infestations are reported as quite heavy in the southeastern part of Kansas and northeastern part of Oklahoma. Conditions are reported as about normal in Missouri, and a little above normal in Nebraska, Indiana, Illinois, and Ohio.

The Hessian fly is reported as being practically controlled this year in Ohio and Illinois. Rather severe infestations are reported from parts of Iowa and from southeastern Nebraska, and the fly is also reported as being on the increase again in Missouri.

Rather severe wireworm injury is reported from Nebraska, Missouri, Iowa, and Washington State.

The pea aphid as a pest to both alfalfa and garden peas has been reported as much more than normally destructive in Missouri, Kansas, California, tidewater Virginia, Kentucky, Michigan, Iowa, and the western part of Oklahoma.

Heavy grasshopper outbreaks are already indicated in parts of Texas and Montana.

The apple aphid situation during May was not serious throughout the greater part of the eastern fruit belt. The green apple aphid was reported as abnormally abundant in Georgia, while the rosy apple aphid was reported as doing some damage in sections of Indiana and in the western part of Arkansas.

An unusual infestation of the fruit-tree leaf-roller appears likely in Cache County, Utah.

The apple-tree tent-caterpillar is appearing in unusual numbers throughout the New England and the Middle Atlantic States as far south as Virginia.

Good results on control of the San Jose scale with lubricating-oil emulsion are reported from Missouri and Illinois.

Experiments carried on in Georgia seem to indicate that no damage is done to peach trees from 3 to 5 years old by the use of $3/4$ of an ounce of paradichlorobenzene for a period of 28 days. Excellent results from the use of this insecticide in commercial peach orchards are reported.

The Mexican bean beetle is reported from Lee County, Ala., 50 miles south of the known infested area in 1922, and has been reported from the eastern part of Mississippi, a State which was not known to be infested last year.

The bean leaf-beetle is unusually abundant in Maryland, Illinois, and Mississippi, in some places doing considerable damage to garden beans.

Unusual damage by the striped cucumber-beetle is reported from Long Island, N. Y., tidewater Virginia, Maryland, Kentucky, Louisiana, Mississippi, and New Mexico.

The boll weevil is present in threatening numbers in parts of Texas and Mississippi. The winter mortality was much higher during the past winter than during the winter of 1921-22 in Oklahoma.

The tobacco flea-beetle is reported as seriously injuring seed beds in Kentucky and Maryland.

The periodical cicada, Brood XIV, is appearing in scattering numbers in parts of Maryland, and a single individual was taken at Maywood, Va. Brood XXII is appearing in a full emergence in the four southwestern counties of Mississippi.

The yellow-fever mosquito is appearing unusually early this year in parts of Louisiana. This pest has also been reported from Galveston and Houston, Tex.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR MAY, 1923.

The close of May finds the season still two weeks later than 1922 in central and eastern Canada but as much earlier in the West and Pacific Coast sections. In Alberta wheat seeding was about complete by May 15, being somewhat earlier than normal owing to the soil moisture conditions while plant growth and insect development are about as usual. In Nova Scotia the season is later than at any time during the past ten years.

Stem mothers of the raspberry aphid, 'Aphis rubiphila Patch', which is one of the most important factors in the dissemination of raspberry mosaic, a disease very prevalent in northern Ontario, are more plentiful than usual in the raspberry plantations of the Niagara District.

The pear-leaf blister mite is extremely prevalent on apples this season in the Okanagan Valley, British Columbia. Its spread on apples has been phenomenal during the past two years; pears in the same orchards commonly being left uninfested.

The glassy cutworm, 'Sidemia devastator Brace', is common and widely distributed in the vicinity of Saskatoon, Saskatchewan, this year. The larvae are found feeding on the roots of the wild barley, a weed of cultivated pasture lands.

The wireworm, 'Agriotes mancus Say', is the most numerous injurious species in the Dartmouth vegetable-growing area of Nova Scotia.

The forest tent caterpillar, 'Malacosoma erosa Stretch', which defoliated forty square miles of aspen poplar in the Moose Mountain Forest Reserve, Saskatchewan, in 1922 is present again in large numbers and the entire Reserve is threatened with serious defoliation. The outbreak will apparently be general throughout a large part of Southern Saskatchewan and Alberta.

In many sections in the Similkameen and Okanagan Valleys of British Columbia crickets (Decticinae) have hatched in considerable numbers this year. The coulee cricket, Peranabrus scabricollis Scud., and the Mormon cricket, Anabrus simplex var. maculatus Caudell, formerly recorded for these sections by the finding of an occasional specimen, are present this year in noticeable numbers.

Additional reports of injury to spruce by the Eastern spruce bark-beetle, Dendroctonus piceaperda Hopk., have been received from the northern part of the Gaspé Peninsula in the Province of Quebec. An extensive infestation by this species has been developing slowly in the central part of this Peninsula for several years. It is of special interest that this section, the only large area in Eastern Quebec which escaped the recent spruce budworm outbreak, is the only one in which serious bark-beetle injury has appeared in recent years. Similar injury to large white spruce in northern Manitoba and Saskatchewan, investigated last season, is apparently decreasing in intensity.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

CHINCH BUG (Blissus leucopterus Say)

- Ohio H. A. Gossard (May 11): Weather conditions have been rather favorable for the development of chinch bugs and since there were plenty of them last year we expect they will attract some attention.
- Indiana H. F. Dietz (May 19): A large flight of the overwintering adults of this insect took place at Indianapolis on May 1.
- J. J. Davis (May 22): Chinch bugs are numerous in wheat fields in many parts of the State but are rather inactive on account of the cool weather.
- Illinois W. P. Flint (May 18): A general flight of chinch bugs from winter quarters occurred from April 24 to May 1. Large numbers of bugs can be found in the wheat at the present time. The infested area extends from Henderson County in western Illinois and Cook County in eastern Illinois, south to Union, Johnson, and Pope Counties. The weather has been very cool for the past two weeks. Sufficient numbers of bugs are present in this area to cause serious damage during the coming season.
- Nebraska M. H. Swenk (May 28): On May 21 chinch bugs were beginning to appear commonly in the wheat fields of Gage County, and a few were to be seen in the fields as far north as Cass County.
- Missouri L. Haseman (May 8): The first bugs at Columbia were observed on the wing April 21 and again April 28 and during the week of April 29 to May 5 were observed in Howard County. (May 22): Chinch bugs apparently wintered safely and by the first of May had begun migrating. To date wheat fields in central Missouri show rather light infestation, but in some parts of the State farmers report heavy infestations of winged bugs.

A. F. Satterthwait (May 14): Chinch bugs were in flight at Pacific on April 11 (R. C. Lange, observer), and were in copulation at the same place on May 7. Numbers have been small since April 2, when the temperature was 20°F.

Kansas J. W. McColloch (May 3): In southeastern Kansas corn and sorghums are up and the bugs are attacking these crops. Migration was later than usual this year owing to the backward spring. (May 3): Chinch bugs have been flying in large numbers the last few days and becoming established in wheat and other small grains.

Oklahoma E. E. Scholl (April 24): The observation on this insect showed the air full of chinch bugs on the wing from winter quarters along a ravine to wheat fields. The flight was northward. Locality, 7 miles west of Stillwater, in Payne County. Many more were observed than last month. (May 9): A chinch bug survey made last week showed that these insects are very numerous in the northeastern part of Oklahoma. There are considerably more insects present where the fields were not burned thoroughly last winter. Wheat growers of that part of this State are now convinced that thorough burning is a fine chinch bug control measure.

HESSIAN FLY (Phytophaga destructor Say)

Ohio H. A. Gossard (May 11): In the few fields of wheat that were sowed early last fall before the fly-free date there is an abundance of Hessian fly, but such fields are so few that they will not affect the general situation, which is better than it has been during the last ~~ten~~ years in Ohio with reference to the Hessian fly. No eggs have yet been found at Wooster or at Chillicothe.

Illinois W. P. Flint (April 20): Adults of the Hessian fly have not yet been found in the fields. (May 18): The first adults of this insect were seen at Urbana on April 30. Spring brood of the fly will apparently be very light; but little damage to wheat is expected from this brood.

Iowa F. D. Butcher (May 7): On May 5, in Polk County, the adult flies were emerging in large numbers. On 16 stalks having 2 or 3 blades there were 92 eggs.

F. A. Fenton (May 16): A field trip taken May 5 by Dr. C. J. Drake and Fred Butcher revealed the fact that Hessian flies were swarming in the wheat fields, and our cage experiments indicate that they are emerging in large numbers on favorable days. Present indications are that there will be serious Hessian fly damage wherever wheat was planted before the fly-free date.

C. N. Ainslie (May 26): In fields near Onawa, which were very heavily infested last October, I find that the spring infestation is almost 100 per cent. At least every plant was infested with larvae, many of them mature and many in the flaxseed stage. From 4 to 8 larvae were common in a single tiller.

Nebraska

M. H. Swenk (May 28): In spite of the dry summer and fall of 1922, the Hessian fly has by no means dropped out of sight. It seems fairly well distributed over southeastern Nebraska, and in the eastern parts of Cass and Otoe Counties has so injured the already thin stand of wheat in many fields, where it was working last fall, that they are being plowed up and planted to corn. Farmers in this section sowed their wheat earlier than they should have done last fall, in many cases, and such fields are the ones chiefly injured. In a number of fields in that section examined early last week from 75 per cent to practically 100 per cent of the stems were affected, some affected stems containing 30 or more larvae, so that the fields promised anywhere from a quarter of a normal crop to nothing at all. They were just beginning to transform into puparia on May 21.

Missouri

A. F. Satterthwait and assistants (May 14): First eggs were found at Meramec Highlands and at Pacific April 19; first field adults at Pacific April 19. Eggs are scarce. Some larvae of the first brood were nearly fully grown at Pacific on May 9.

L. Haseman (May 22): The Hessian fly is apparently on the increase again. Fall infestations in the southern part of the State and along the northern tier of counties were somewhat alarming, and we are expecting some loss of grain from the fly, particularly in the northern part of the State, this summer.

GREATER WHEAT-STEM MAGGOT (Meromyza americana Fitch)

Oklahoma

Edward Martin (April 15): At Buffalo, Harper County, this insect is producing spots similar to those produced by greenbugs and was thought for a long time to be Toxoptera work. It is more abundant than in the average year but about the same as last month. Infested spots in fields counted and showed a 1 per cent infestation.

GREENBUG (Toxoptera graminum Rond.)

Ohio

T. H. Parks (May 20): In Pickaway County wheat is badly damaged by Toxoptera in one spot of a field. The spot joined a blue grass fence row from which the aphids evidently came. The blue grass at this place was killed by them. Aphids have spread considerably but are now overcome at this spot by coccinellid larvae. No extended damage to the remainder of the field is expected. The aphids evidently wintered in this blue grass. We have had no zero weather the past winter. No reports of its presence have been received from other localities in the State.

Kansas

J. W. McColloch (April 26): The greenbug is now present in Ellis, Cowley, Sumner, Harper, and Comanche Counties. The infestation is spotted and confined to small areas, but winged forms are present and there has been some spreading. Coccinellid adults and larvae are abundant in most fields.

Oklahoma

E. E. Scholl (April 25): I have inspected quite a number of grain fields in the Counties of Pawnee, Payne, Noble, Logan, Garfield, Grant, and Alfalfa. Recent rains have brought out the wheat wonderfully well, and the presence of lady-beetles, especially in the western counties, has greatly reduced the infestations. In the western part of Payne County it developed in our investigations yesterday that occasionally we find fields where the greenbugs are so numerous that a great deal of wheat will be destroyed before the pest will be overcome by the lady-beetles.

WESTERN ARMY CUTWORM (Chorizagrotis auxiliaris Grote)

Nebraska

M. H. Swenk (May 28): Shortly after May 16 I learned that a local but heavy flight of the moths of the western army cutworm was taking place in Arthur County.

WHEAT JOINTWORM (Hamolita tritici Fitch)

Missouri

A. F. Satterthwait (May 1): Each year a portion of many hillside wheat fields is left unharvested, with Hamolita tritici the dominant insect pest and infestations up to 40 per cent common, occasionally over 80 per cent. Adults were issuing on April 27; the apex of the issuance had not been reached on May 1. The locality of the infestation was at Valley Park.

WIREWORMS (Elateridae)

Missouri

A. F. Satterthwait (May 14): Occasional stalks of wheat were found killed by wireworm larvae at Valley Park in several bottom fields, the larvae ranging from about 1/2 to over 1 inch in length. Similar injury by wireworms was observed at Pacific May 7.

Nebraska

M. H. Swenk (April 15 - May 15): In addition to losses by false wireworms, there seem to have been some rather serious injuries by a species of true wireworm, apparently a Cryptohypnus or Limonius, in the Platte Valley of western Nebraska. Such reports were first received from Keith County near Ogallala and later from Morrill County near Broadwater and from Scotts Bluff County. These reports were received during the last few days in April and the first two weeks in May, winter wheat being the injured crop in all cases.

DRY-LAND WIREWORM (Ludius noxius Hyslop)

Washington

M. C. Lane (April 19): In a trip through Douglas County, especially around Waterville, damage to the winter wheat from this wireworm seems to be somewhat less than usual. This is due largely to the better stands and thriftier growth of the grain, which is in turn due to the dry copper carbonate treatment of fall seed for smut and better cultural methods of the last few years. Wireworms were found easily in the poorer stands, but their damage was not noticeable in the majority of fields, especially where the wheat was covering the ground at this time.

It is too early to find damage to spring wheat, of which there is very little being seeded. Wireworm damage to spring sown wheat is entirely dependent on weather conditions. With warm dry spring after seeding the wireworms will not work as readily as if the weather remains cold and damp.

(May 1): Larvae of this species are doing the normal amount of damage to the wheat in the Big Bend Region this spring. Damage by the larvae to spring wheat is normal in all fields, owing to cool damp weather the last two weeks. Loss from wireworms of this species averages at this time 10 to 20 per cent of the total plants that sprouted, and the damage is continuing. There is no difference in damage between fields with wet formaldehyde smut treatment and fields treated with dry copper carbonate, though there is more stand and thriftier wheat in the latter fields dry treated. Damage will continue till the weather warms up and the ground dries out down to the wheat crowns.

Adults of this species have appeared the first week in May for the last three seasons and this year is no exception, a few being found today. The males are the only sex found in flight and these only for a week or two.

This report applies to Lincoln, Adams, and Franklin Counties.

IRRIGATION WIREWORM (Pheletes sp.)

Washington M. C. Lane (April 24 and 25): In a trip through the irrigated valleys adjacent to Ellensburg and Yakima, wireworms of this genus were found doing a little damage to spring grain. Damage was similar in every way to that done by wireworms of the genus Ludius under dry-land conditions. However, this wireworm seems to be more of a truck crop wireworm and feeds the whole season on several crops of this class. It is only found under irrigated conditions and thrives best in wet sour places in this section. Damage to growing tubers of potatoes by the feeding tunnels of this wireworm mounts into the millions of dollars every year in Yakima Valley. So far this is the worst insect enemy the farmers of this fast-growing truck crop section have to deal with.

INFLATED WIREWORM (Ludius inflatus Say)

Washington M. C. Lane (April 24 and 25): In a trip to Kittitas and Yakima Counties this wireworm was found to be doing considerable damage to winter wheat on the high prairies near the timber. Wireworms of this species were collected at both Thorp and Tieton that had been killing the wheat for 10 days past and were still at work, although the ground was becoming warm and dry. Good examples of damage done by spring harrowing of winter wheat were seen in these places. Places skipped in fields by the harrow showed fine stands of wheat, while the most part that was harrowed is thin, and the wireworms are fast finishing what was not hurt by the harrow teeth. Loosening up the ground in the spring gives the wireworms a much better chance of moving from plant to plant in drill rows and keeps them also nearer the surface longer. Some seed injury from the use of formaldehyde for smut was also noted, and this in the past has been blamed wrongly in many cases to wireworms.

FALSE WIREWORMS (Eleodes spp.)

Nebraska M. H. Swenk (April 15 - May 15): During the period covered by this report the Great Plains false wireworm continued to be the most seriously injurious enemy of field crops actively present in the State. The Cheyenne County infestation referred to in my last report continued to be the cause of complaints up to the latter part of April. This infestation extended from around Sidney north to around Curley in that

County. Early in April reports were received of injury in Hitchcock County, near Stratton, and such reports continued until the end of the first week in May. These reports indicated about as serious injury in Hitchcock County as in Cheyenne County. During the latter part of April similar reports were received from southern Deuel County, and adjacent parts of Sedgwick County, Colorado. On one farm near Julesburg it was reported that 100 acres of wheat had been destroyed. It would seem that in several western Nebraska counties this pest was an important minor factor in the heavy abandonment of winter wheat fields that has occurred this spring.

Kansas

J. W. McColloch (May 2): A map taken from the Kansas City Weekly Star on this date is of interest because the area of wheat failure and abandonment corresponds with the area where the false wireworm was so destructive last fall and this spring. Most reports credit this failure entirely to drought, but the fact that no germination occurred following rains indicates that the seed was injured.

Washington

M. C. Lane (May 1): There are five species of *Eleodes* that are found in and around the wheat fields of the Big Bend Region in both larval and adult stages. These are vandykei Blaisd.; numermacheri, var. verucula Blaisd.; hispidabris, var. imitabilis Blaisd.; nigrina, var. difformis Blaisd.; and humeralis Lec., named in the order of abundance of larvae found in wheat fields. There probably is no appreciable damage except from the first-named vandykei, and the damage is hard to estimate. Their damage is to the seed when first planted, and the larvae are very active in the dust during fall seeding and also in the spring, a great many being killed by harrowing. There is no damage to sprouted wheat as far as can be observed. Adults are more numerous than normal this spring, being busy now in laying their eggs. The new brood of adults will not appear till the first of July.

TIPULID LARVA

Michigan

R. H. Pettit (May 22): Tipulid larvae were reported as almost covering new-plowed land at Elwell on the 18th, and were accompanied by larvae of Bibio (probably albipennis).

CORN

CORN EARWORM (Heliothis obsoleta Fab.)

Ohio

H. A. Gossard (May 11): Observations taken at Chillicothe do not indicate that moths of the corn earworm have yet emerged or become active.

Louisiana

T. E. Holloway and W. E. Haley (May 17): In Orleans Parish large larvae of the corn earworm are in young corn along the lake shore of Little Woods.

EUROPEAN CORN BORER (Pyrausta nubilalis Huebn.)

Massachusetts A. I. Bourne (May 22): A report from Winchester, in Middlesex County, relative to the European corn borer states that it has been found in no greater numbers this spring than was the case last year.

Ohio H. A. Gossard (May 11): As a matter of course we expect some increase in the density of infestation of the European corn borer this season and slow spread of the species.

SMARTWEED BORER (Pyrausta ainsliei Heinr.)

Iowa C. J. Drake (May 10): This spring I have received several caterpillars of the smartweed borer that were found in old corn stalks. The farmers, of course, were very much interested and wondered whether this was the European corn borer.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Louisiana T. E. Holloway and W. E. Haley (May 3): Half-grown larvae found in young corn plants.

SUGAR-CANE BORER (Diatraea saccharalis Fab.)

Louisiana T. E. Holloway and W. E. Haley (May 17): In Orleans Parish larvae of all sizes are attacking young corn along the lake shore west of Little Woods. Much damage is done in places.

Texas T. C. Barber (May 19): Cornfields, generally, are becoming infested, and adult emergence holes indicate that adults of the spring brood have emerged. Damage is very slight, as yet, but rapidly increasing. Infestation can also be found in broom-corn fields without much difficulty, and threatens to cause serious damage later in the season, although the first crop will not be much injured.

GRASS-STEM WEEVIL (Sphenophorus sp.)

Oklahoma E. E. Scholl (May 21): An examination of corn-fields in the northern part of Lincoln and the southern part of Payne County, near Goodnight, Okla., showed entire fields of young corn killed by a grass-stem weevil.

TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica 12-punctata Oliv.)

North Carolina Philip Luginbill (May 17): Mr. Kewley has returned from Willard, N.C., where he has made an inspection of our plantings, and reports the damage by the rootworm to be about the same as in previous years. Strange to say, at Columbia it is decidedly less. The planting made in April, which is usually badly infested with rootworms, is very little injured this year. It would seem that this year rootworm injury is "spotted" so to speak; probably heavier along the coast, as weather extremes are not so marked. I have had considerable difficulty in rearing larvae this season, owing to low temperatures and damp weather. I think, therefore, that young larvae may have fared similarly in the field, and that is why we do not find so much damage to young corn this year, that is, in inland regions.

Louisiana T. E. Holloway (May 3): One or two adults were noticed on young corn plants at New Orleans. Damage is slight.

T. H. Jones (May 15): At Baton Rouge plantings of corn made in the same field on March 10, March 17, April 7, April 21, and April 28 were examined on different dates, when corn of different plantings was of about the same size, to determine the relative amount of damage to corn planted on different dates. All except the planting of April 28 showed some damage by the larvae, especially the plantings of March 10 and April 7.

WHITE GRUBS (Phyllophaga sp.)

Texas F. C. Bishopp (April 24): At Dallas adults of this species have been coming to the lights during the past week in moderate numbers. This is the first activity of adult *Lachnosterna* observed this spring.

WIREWORMS(*Elateridae*)

Missouri L. Haseman (May 1 to 8): The abundance of wireworms on corn is a little greater than in an average year. Infestations are generally distributed over the State. The weather has been cool, rather rainy, with warm spells.

Iowa C. N. Ainslie (May 26): I heard this morning that wireworms are taking the corn near Hawarden, north of Sioux City.

ROUGH-HEADED CORN STALK-BEETLE (Ligyris gibbosus DeG.)

Mississippi R. W. Harned (May 18): The rough-headed corn stalk-beetle is attracting considerable attention in Mississippi at the present time. Almost every day complaints are received at this office regarding damage to corn by these beetles.

SOUTHERN CORN LEAF-BEETLE (Myochrous denticollis Say)

Kansas J. W. McColloch (May 14): At Hartford the southern corn leaf-beetles are reported seriously injuring the early planting of corn.

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

Iowa C. J. Drake (May 25): The seed-corn maggot is doing a considerable amount of damage to a field of corn near Madrid, Boone County. We visited this field last Tuesday and found the maggots present in many hills. This field was planted on May 7, and the cold moist weather has been favorable for the maggots, but unfavorable for the corn. Some of the kernels contain from five to eight maggots each.

ALFALFA AND CLOVER

PEA APHID (Illinoia pisi Kalt.)

Missouri L. Haseman (May 4 and 8): We have just begun to get complaints of this pest, but it looks serious, especially as a cold wave on May 8 has swept over us. Some fields in Jackson and Howard Counties are

almost completely destroyed. Abundance is much worse, compared with an average year. Natural enemies observed are ladybeetles, syrphid flies and Hymenopterous parasites. One sample showed Hymenopterous parasites very abundant.

- Kansas J. W. McColloch (April 26): The infestation is general in the Kaw River Valley of Shawnee and Wyandotte Counties. Six hundred acres are reported infested. Many aphids are winged and are spreading to garden peas.
- California C. M. Packard (April 30): In Owens Valley there are several thousand acres of alfalfa. An unusually warm winter followed by a cool spring is probably responsible for the outbreak. Coccinellids and syrphids are now very abundant and will probably soon reduce the infestation to comparatively unimportant normal numbers. One-half of the first crop is damaged. (May 26): A letter from the County Horticultural Commissioner says that the aphids have almost disappeared in Inyo County and Owens River Valley. There was a decided reduction of their numbers soon after May 1, and where irrigation has been applied the alfalfa is advancing in fine shape.

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

- Delaware C. O. Houghton (April): Injury by this species appears to be about the same as usual at Newark.
- Illinois W. P. Flint (April 20): Larvae of Hypera punctata are still very small.
- Missouri A. F. Satterthwait (May 15): Found larvae of all sizes, cocoons, pupa, and new adults on April 25 at Creve Coeur, the larvae cutting foliage badly. On May 9 eggs, larvae (only a chance one diseased), and adults were collected at Valley Park.
- Kansas Roger C. Smith (May 3): The clover-leaf weevil was very plentiful in a field north of Kansas City. I found larvae of all sizes and some cocoons. I found 8 larvae and 1 cocoon around one clump, but observed very little injury from their feeding. Elsewhere in the valley the weevil, while present in small numbers, does not appear to be of any great importance.
- Ohio H. A. Gossard (May 11): The clover-leaf weevil has been noticed quite abundantly at Chillicothe, but they are already dying from fungous attack.

LESSER CLOVER-LEAF WEEVIL (Phytonomus nigrirostris Fab.)

- Illinois W. P. Flint (April 20): Small numbers of the clover bud weevil have migrated to the clover fields, but not all of these insects have left hibernating quarters.

GRASS

GRASSHOPPERS (Acridiidae)

- Texas M. C. Tanquary (May 14): Correspondence indicates the possibility of a heavy outbreak of grasshoppers in Coleman County this spring.
- Montana Stewart Lockwood (May 21): The County Agent of Cascade County reports a heavy outbreak. Probably Melanoplus atlanis and bivittatus.

TWO-STRIPED GRASSHOPPER (Melanoplus bivittatus Say)

- Montana Stewart Lockwood (May 17): Numerous young grasshoppers are now hatching in sod land and alfalfa fields, with many more to come. In some places 40 pods of eggs to the square foot are found.

WHITE GRUBS (Phyllophaga spp.)

- Iowa C. N. Ainslie (May 17): Half-grown larvae of Lachnosterna are very plentiful in top soil at Sioux City. Adults of Lachnosterna implicita Horn are taken in large numbers after the plow and in gardens at Sioux City. Lachnosterna rugosa ~~Melsa~~ is present but not so numerous as L. implicita.
- New York Roy Latham (May 1): The first date of swarming is May 1 at Orient, with the weather cool and dry. Abundance is normal as compared with an average year.
- L. J. Jones (May 1): Adults are not yet numerous at Bainbridge. They are not as numerous as previously. The weather is cold and wet.

BILLBUGS (Sphenophorus spp.)

- Missouri A. F. Satterthwait and assistants (May 14): Billbug eggs, of at least two species, were found as follows: May 7, Pacific, Franklin County; May 9, Valley Park, St. Louis County; May 14, Webster Groves. (May 15): April 25 a heavy billbug infestation in an old timothy meadow at Creve Coeur showed 94 per cent Sphenophorus destructor Chitt., 3 per cent parvulus Gyll., 2 per cent zeae Walsh., and 1 per cent venatus Say, all adults, the total specimens taken being 107.

F R U I T I N S E C T S

APPLE

GREEN APPLE APHID (Aphis pomi DeG.)

- Massachusetts A. I. Bourne (May 22): Northeastern Essex County reports indicate that the green apple aphid is not very abundant and is not causing any serious alarm; in Middlesex County it is present in normal abundance; Worcester County reports state that it is fairly abundant, and slightly worse than last year. In the southern half of the county very few aphids have been found, particularly in the well-cared-for

orchards. In Bristol County and the Cape region they have been reported as being present in about average numbers, no worse at any rate than in normal years. In northern Plymouth County a report from Brockton states that hardly any have been found in orchards.

In the counties in the Connecticut Valley they have been found to be quite plentiful on the opening buds, but no worse than last year, and not abundant enough to cause any serious worry. Here at the college, although examination of the trees in the dormant season indicated a large number of eggs, the hatch was very small indeed, and the lice are present in unusually small numbers throughout all the blocks of apples in the orchards. Not enough lice are present, in fact, to warrant a call for Black-Leaf 40 in the early spring spray.

New York P. J. Parrott (April 23): The first nymphs of Aphis pomi were found on this date at Geneva.

C. R. Crosby and assistants: This aphid is found present but not abundant in Monroe, Chautauqua, Onondaga, Genesee, Orleans, and Suffolk Counties.

Georgia Oliver I. Snapp (May 1): The apple leaf-aphid is unusually abundant on the apple in this locality this season.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

New York C. R. Crosby and assistants: The grain aphids began hatching the latter part of April; they are reported as very abundant throughout Ontario and Columbia Counties, also recorded from Onondaga, Oswego, Genesee, and Westchester Counties.

Alabama Neale F. Howard (April 11): This aphid is very abundant on rye on the Bureau's experimental plots here. Hippodamia convergens Guer. is very abundant and Megilla maculata DeG. is quite numerous, eggs of the latter being quite common. This rye is being plowed under for a cover crop and the infestation has not been present long enough to have caused any injury. No loss has occurred on this field.

ROSY APPLE AFHID (Anuraphis roseus Baker)

New York C. R. Crosby and assistants: This species is only present in limited numbers throughout the apple-growing sections of the State.

Indiana J. J. Davis (May 22): The rosy apple aphid is doing some damage in sections of southern Indiana. They are doing damage in several orchards and one in particular at Clayton, Ind., which was examined May 19. Several trees in this orchard were sprayed with 2 per cent lubricating oil emulsion as the buds were opening up and after the aphids had hatched. The owner advises that the young aphids were killed but that many of the older individuals survived the treatment. This same orchardist sprayed apple trees at different stages of development from the time the buds were beginning to open up until the leaves were the size of a squirrel's ear or larger. At no time did he get injury from the properly prepared oil emulsion.

B. A. Porter (May 23): A rather severe infestation is developing in the vicinity of Vincennes. A few winged migrants are appearing.

Arkansas A. J. Ackerman (May 14): This is the first season that this species has been found in any number of orchards of northwestern Arkansas. Little damage is expected, as an abundance of predaceous ladybird larvae have been noted wherever infestations occur.

CODLING MOTH (Carpocarsa pomonella L.)

New York C. R. Crosby and assistants: The codling moth began pupating early in May. No unusual outbreaks have been reported so far from the fruit-growing sections of New York.

Virginia L. A. Stearns and assistant: Pupation of overwintered larvae was commencing in Leesburg, northern Piedmont, April 8, and in Winchester, northern Valley, April 9.

Indiana H. F. Dietz (May 19): The first moths emerged at Indianapolis on May 14. On this date all the bloom of varieties of apple like Yellow Transparent and Wealthy was off and the calyx lobes were beginning to close.

J. J. Davis (May 22): The codling moths, adults, have not yet issued at La Fayette according to our observations.

Missouri Leonard Haseman (May 22): Adults from the overwintering worms began emerging a little late, though they have been out now for about 10 days. The late spring also held back the fruit bloom. No eggs or worms have been taken in central Missouri at this date.

Arkansas and Kansas A. J. Ackerman (May 14): The first moths emerged in jars at the Bentonville, Ark., Laboratory, on May 1. At Wichita, Kans., the first moths were taken from jars on May 7.

RASCAL LEAF-CRUMPLER (Mineola indiginella Zell.)

Nebraska M. H. Swenk (May 15): Late in April a small apple orchard in Dundy County was reported heavily infested with the cases of the leaf-crumpler, Mineola indiginella. The partly grown caterpillars were already active by May 1.

RIBBED COCOON MAKER (Bucculatrix nemifoliella Clem.)

New York C. R. Crosby and assistants: This species is quite general over the fruit-growing sections of the States especially in poorly cared for orchards. It is very heavily parasitized; in one case nine-tenths of the cocoons had exit holes of parasites.

FRUIT-TREE LEAF-ROLLER (Cacoecia argyrospila Walk.)

New York C. R. Crosby and assistants: This insect is found moderately abundant throughout Dutchess, Genesee, Ontario, Orleans and Ulster Counties. Eggs began hatching about the middle of the month.

- Utah Ira M. Hawley (May 14): This insect is spreading in counties where it has been introduced, and egg masses are much more abundant than in former years.
- H. J. Pack (May 18): An unusual infestation appears likely in Cache County this year. Egg masses are very numerous, and hatching has been going on for the past few days.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

- Connecticut P. Garman (April 26): Numbers of adults were observed about apple trees in New Haven and north Branford on the 20th and 26th.
- New York P. D. Rupert (May 26): Young larvae are starting to skeletonize at Upper Red Hook.

Henry Bird (May 17): This insect has not been observed as yet at Rye, and since the last fall brood of adults was very much smaller than was the case in 1921, the chances are that there may not be much of an outbreak during the coming season.

BUD MOTH (Tmetocera ocellana D. & S.)

- Massachusetts A. I. Bourne (May 22): The bud moth seems to be occurring more or less abundantly in some sections of the State. A report has been received from the County Agent of Bristol County, stating that they are finding them in some abundance. Here at Amherst they also appear to be more abundant than last year, though not in numbers enough to cause serious damage.
- New York C. R. Crosby and assistants: This insect is reported as moderately abundant throughout the western part of the State. A single case of serious infestation has been reported from Wayne County, where from 5 to 25 per cent of the buds were destroyed where the delayed-dormant spray was not applied or was applied too late.

APPLE TENT CATERPILLAR (Malacosoma americana Fab.)

- New Hampshire P. R. Lowry (May 18): This insect is much more numerous than last year in several places, and I have noticed rather severe defoliation to apple.
- Massachusetts A. I. Bourne (May 22): This insect began hatching in the region about Amherst April 20, and was reported as hatching somewhat earlier in the eastern part of the State. It is reported as being exceedingly prevalent this year, reports having been received from Essex, Middlesex, Worcester, Bristol, and Plymouth Counties. One report from the town of Harford in Worcester County estimates an increase over last year of from 50 to 60 per cent. This insect is decidedly on the increase in all sections of the State and bears out predictions made from the abundance of egg masses early in the season. Delayed-dormant spray seems to have controlled this pest.

- Connecticut M. P. Zappe (May 8): This insect has been observed as much more abundant than last year at many places throughout the State.
- New York M. D. Leonard (May 12): Tents of this insect are common on wild cherry trees in Albany County.
- C. R. Crosby and assistants: This insect is generally more abundant than it was last year in the Hudson River Valley. It is reported as at least half again as numerous in the western part of the State. It has been controlled by delayed-dormant spray.
- New Jersey H. B. Weiss (May 5): The apple tent caterpillar is more abundant than usual over the northern third of the State.
- M. D. Leonard (May 22): This insect has been observed as very common at Glenrock and Ridgewood.
- Pennsylvania T. L. Guyton (May 9): The species is reported as very common all the way from Harrisburg to Philadelphia.
- Delaware C. O. Houghton (April 25): Nests are now very numerous, more so than at any time during recent years. Eggs were hatching April 5, just about a week later than last year.
- Maryland E. N. Cory (May 8): The apple tree tent caterpillars have defoliated most of the roadside cherry trees. They are much more abundant than heretofore in Prince Georges, Baltimore, Anne Arundel, Harford, and Montgomery Counties.
- Virginia L. A. Stearns (May 9): Nests of this insect are conspicuously abundant on wild cherries and on apples in Fairfax County.

FALL WEBWORM (Hypphantria cunea Drury)

- Georgia O. I. Snapp (May 8): The first-brood moths are now emerging in the insectary. The larvae of these moths were taken from a nest on a peach tree last fall. Usually the attack on peach foliage is made by the fall brood of larvae, after the fruit has been harvested. The larvae captured last fall were heavily parasitized by a dipterous parasite.

SPRING CANKERWORM (Paleacrita vernata Peck)

- New York C. R. Crosby and assistants: This insect is reported as more or less serious in Dutchess and Genesee Counties.
- Illinois W. P. Flint (April 20): Adults of the spring cankerworms have been observed on the wing during the month.
- Iowa C. N. Ainslie (May 22): Adults are numerous about the light, the flight being later than usual.
- Ohio H. A. Gossard (May 11): On March 28 we received a spring cankerworm moth from Ravenna.

FALL CANKERWORM (Alsophila cometaria Harr.)

- Connecticut M. P. Zappe (May 8): Larvae have just hatched at New Haven and Milford
- New York G. E. Smith (April 26): A few eggsmasses of this insect were found south of Medina and south of Orleans County.
- Ohio H. A. Gossard (May 11): Eggs of this insect were received from Hinkley.

FALSE APPLE RED-BUG (Lyzidea mendax Reut.)

- Massachusetts A. I. Bourne (May 22): These insects began their characteristic scarring about the 7th of May at Amherst. This insect is evidently somewhat less abundant than last year, very few being reported from other sections of the State. At Amherst there seems to be a considerable increase over last year.
- New York C. R. Crosby and assistants: This insect is reported as being quite general throughout Dutchess County, where there are many bad infestations. It is also reported though in smaller numbers from Columbia, Rockland, and Ulster Counties.
- Maryland E. N. Cory (May 11): Slight damage to tender tips on check trees in experiment plats has been noted at Whiteford, Va.
- Virginia W. J. Schoene (May 23): There is more red-bug injury in the Winchester region than has been noted in previous years. The insect has not yet become a major pest in this section, however.

APPLE LEAFHOPPERS (Several species)

- Massachusetts A. I. Bourne (May 22): The apple leafhoppers began to appear in the college orchard at Amherst about the 8th of May. Present indications are that this pest will appear in greater numbers than for several years past.
- Connecticut M. P. Zappe (May 8): Young nymphs are just hatching at Milford.
- New York C. R. Crosby and assistants: These insects are reported as being very abundant throughout Orleans County. They are also reported, though not a serious pest, in Wyoming, Dutchess, and Ulster Counties.
- Virginia L. A. Stearns (April 22): The numbers of this insect have been rapidly on the increase during the past few years in Fairfax and Loudoun Counties, northern Piedmont. This species (Erythroneura hartii Gill.) is the most important leafhopper on apple in this section and probably the most serious of the minor apple pests.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

- New York C. R. Crosby and assistants: This insect has been reported as quite generally abundant throughout the apple-growing sections of New York State. The pest is becoming more abundant and serious in Orleans County, and in places in Oswego, Wayne, and Wyoming Counties.

- Ohio H. A. Gossard (May 11): This pest is being reported from several parts of the State.
- Illinois W. P. Flint (May 18): An unusually high percentage of scale have survived the winter in southern Illinois. Examinations of unsprayed apple and peach trees made from May 1 to the 5th, shows from 70 to 76 per cent of the scale alive. Results of spraying with the lubricating oil emulsion have been excellent. This material has been generally used by orchardists in the southern and western fruit districts.
- Missouri Leonard Haseman (May 22): Good results on control have been secured with lubricating-oil emulsion. Experiments with different strengths make it seem likely that this emulsion has a great future. Male scales in central Missouri began emerging between May 10 and May 15.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

- New York C. R. Crosby and assistants: This insect has been reported as being quite generally abundant over the fruit growing sections of the State, becoming very abundant in many apple orchards.
- Indiana H. F. Dietz (May 19): Hatching of eggs of the light-brown form of this insect began on May 18, which is 18 days later than last year. This is a two-brooded form. No hatching of the gray-brown form, which is single-brooded, has been observed about Indianapolis.
- Nebraska M. H. Swenk (May 15): Several reports of injury by the oyster-shell scale have been received during the period covered by this report.

EUROPEAN RED SPIDER (Paratetranychus pilosus C. & F.)

- Massachusetts A. I. Bourne (May 22): European red mites were found about the first week in May at Amherst and are now quite prevalent throughout all of the blocks of apples, particularly on Baldwins, although they are not as abundant as has been the case during the last two or three seasons. One report has been received from outside the Connecticut Valley. This is from Harvard in Worcester County, where they are reported as quite numerous and quite generally spread throughout the orchard, where they were found on tender opening leaves.
- New York C. R. Crosby and assistants: This insect has been reported as more or less numerous in Rockland, Orange, Orleans, Ulster and Dutchess Counties.
- Ohio H. A. Gossard (May 11): Eggs of the European red spider were received on May 10 from a suburb of Cleveland.

PEAR

PEAR PSYLLA (Psylla pyricola Foerst.)

- Massachusetts A. I. Bourne (May 22): During the first week in May pears at Amherst were found to be infested and egg laying was under way. Eggs were so numerous that in many cases on a single fruit spur 50 to 60 eggs could be counted. This is the most serious infestation that we have had for several years. Very few inquiries have been received from other parts of the State, so the outbreak is probably local.

New York C. R. Crosby and assistants: Pear psylla eggs were hatching throughout the western part of the State from the middle to the latter part of May. The pest is generally abundant throughout the fruit section, about 50 per cent of the orchards being seriously infested in Genesee County. In the southern part of the State it is quite general, but not serious.

PEAR-LEAF BLISTER-MITE (Eriophyes pyri Pgst.)

Massachusetts A. I. Bourne (May 22): Work of the blister-mite is just beginning to show up at Amherst, especially on trees which did not receive the application of lime-sulphur.

Connecticut W. E. Britton (May 14): Galls are beginning to show up on unfolding leaves at Hampden.

New York C. C. Wagoner (May 18): This insect has been observed in several cases in Ulster County, but is not serious.

P. D. Rupert (May 18): This insect is ~~very scarce~~ in Dutchess County.

PEAR MIDGE (Contarinia pyrivora Riley)

New York C. C. Wagoner (May 18): Two orchards in Ulster County have been found to have 30 per cent infestation.

PEACH

PEACH BORER (Aegeria exitiosa Say)

New York C. R. Crosby and assistants: This pest is recorded as quite severe over most of the State, particularly in poorly cared-for orchards.

Georgia Oliver I. Snapp (May 15): No injury to either the cambium or the bark layer of three, four, or five year old peach trees has shown up to date from the use of the three-fourths ounce dose exposed for a period of 28 days. The peach borer is about as prevalent as normally in Central Georgia. Excellent results are reported from the use of paradichlorobenzene in commercial peach orchards last fall.

PEACH TWIG-BORER (Anarsia lineatella Zell.)

Indiana J. J. Davis (May 22): Peach twigs showing typical injury by the twig-borer were received from Seymour, Ind., on May 5. The orchard-ist reports considerable damage on some trees and that it is a repetition of the injury which occurred a year ago.

Utah Ira M. Hawley (May 14): This pest is just showing up in the orchards. Infested twigs are numerous in unsprayed orchards.

A WEEVIL (Conotrachelus anaglypticus Say)

Georgia Oliver I. Snapp (May 14): Three adults were captured from frames while jarring for C. nenuphar Herbst. on the morning of May 7 and one on May 14. The peach is the host for C. anaglypticus in this latitude, and this species is responsible for a small percentage of the wormy peaches in Georgia.

FLOWER THRIPS (Euthrips tritici Fitch)

Indiana B. A. Porter (May 24): Nearly 10 per cent of the small peaches in the vicinity of Vincennes have been already injured by the peach thrips. (May 25): The thrips appeared early in May as the petals were falling, and within a few days had caused serious injury to the newly set fruit.

C. E. Barker (May 24): Injury to young peaches, identical with the injury by thrips in other localities, has been found at Mitchell, Ind. Estimated 3 to 5 per cent of fruit in 30-acre peach orchard as damaged in this way.

GREEN PEACH APHID (Myzus persicae Sulz.)

New Mexico W. E. Emery (May 7): This aphid has done considerable damage to foliage, but is being sprayed for and put under control in Dona Ana County.

LESSER PEACH-TREE BORER (Aegeria pictipes G. & R.)

New York C. R. Crosby and assistants: This borer has been observed on sweet cherry in small numbers in Wayne County; is common and severe in some orchards in Monroe County, and rather abundant where brown rot cankers are bad in Orleans County, Lake section.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

New York C. R. Crosby and assistants: Many weakened trees are infested at Sodus, Wayne County. The shot-hole borer is plentiful in old peach-wood piles and also in peach orchards around Holley, Orleans County; present in Monroe County; abundant in orchards where peach borers are bad and in stone fruits near brush and wood piles in Orleans County; found locally on peach in Wayne County, where it has killed several black cherry trees.

Georgia Oliver I. Snapp (May 1): Trees are badly infested in several old neglected peach orchards. Twigs of healthy peach trees are sometimes attacked by adults later in the season, as reported in the Insect Pest Survey Bulletin of November, 1922.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia

O. I. Snapp (April 30): The first curculio larvae of the 1923 season reached maturity, left the peach, and entered the soil on this date. On April 18, the first curculio eggs hatched in the insectary. On April 18, a number of larvae varying in age from 3 to 5 days were found in peaches on trees in commercial orchards near Fort Valley.

(May 15): The largest number of eggs deposited to May 13 by any female is 147. The largest number deposited in a single day to date by one female is 14. The average number of eggs deposited during the season to date by females of the first 1922 generation is 61.2 per cent. The average number deposited by second-generation females is 61.2 per cent. The incubation period for C. nenuphar eggs during the past month has varied from 4 to 11 days on account of variable temperatures. An increased infestation in peach "drops" is noted in orchards where the first curculio spray was omitted. Two and one-half bushels of "drops" from one of these orchards have given to date 8,223 matured larvae. Two and one-half bushels of "drops" from an experimental orchard have given to date 4,438 matured larvae as compared with 2,752 from the same amount of "drops" from this orchard a year ago. The general curculio infestation in central Georgia at the present time appears to be heavier than in 1922, but lighter than in 1921.

CHERRY

CHERRY APHID (Myzus cerasi Fab.)

New York

C. R. Crosby and assistants: Found abundantly in inside of Rosette trees, in Ulster County; found in a few orchards around Geneva, in Ontario County.

Maryland

J. A. Hyslop (May 20): All terminal leaves curled, twigs and leaves black with aphids at Avanel. Much more abundant compared with last month and average year.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

West

Virginia

Fred E. Brooks, Monthly News Letter Bureau of Entomology, No. 108, (April, 1923): Failure to collect plum curculios in jarring plum trees on April 14 indicates that these species have not yet emerged from hibernation.

Ohio

H. A. Gossard (May 11): On March 30 the plum curculio beetle was received from Bowling Green taken from plum.

PLUM GOUGER (Anthonomus scutellaris Lec.)

West

Virginia

Fred E. Brooks, Monthly News Letter, Bureau of Entomology, No. 108 (April, 1923): Failure to collect plum gougers, Anthonomus scutellaris, in jarring plum trees on April 14 indicates that these species have not yet emerged from hibernation.

A KATYDID (Microcentrum rhombifolium Sauss.)

Ohio H. A. Gossard (May 11): On March 20 eggs of this species from Greenville were received on plum cuttings.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche')

New York C. R. Crosby and assistants: This insect is plentiful in a few orchards near Medina and Knowlesville, and generally scattered in Orleans County, but not serious in Ontario County.

RASPBERRY

RASPBERRY CANE-BORER (Oberea bimaculata Oliv.)

New York C. R. Crosby and assistants: Considerable damage to raspberry has been reported in Ulster County. In one patch 30 to 40 per cent were reported damaged.

ROSE SCALE (Aulacaspis rosae Bouche')

New York C. R. Crosby and assistants: One infestation in central northern part of Dutchess County is reported.

RASPBERRY FRUITWORM (Pyturus uniclor Say)

New York C. R. Crosby and assistants: Abundant only in one location, few but general in Ulster County.

RASPBERRY SAWFLY (Monophadnoides rubi Harr.)

New York C. R. Crosby and assistants: The first larvae were observed on May 11 in Chautauqua County.

BLACKBERRY

A KATYDID (Microcentrum rhombifolium Sauss.)

Ohio H. A. Gossard (May 11): On January 29 we received eggs of the angular-winged katydid from Springfield on blackberry canes.

BLOSSOM ANOMALA (Anomala undulata Melsh.)

Michigan R. H. Pettit (May 23): We received today specimens of Anomala undulata from Coldwater, Mich., from a farmer who reports that a swarm came out and clustered in large bunches, just like bees. He says the air was filled with them, covering an area of five or six acres, and that they fed voraciously on the foliage of elm, and also on several blackberry bushes. He reports that after this sudden uprising they failed to appear next day and that nothing more has been seen of them.

GRAPE

GRAPE LEAFHOPPER (Tychlocyba comes Say)

New York C. R. Crosby and assistants: Infestation continues much below the conditions of last year at Fredonia, Chautauqua County; where this insect was found feeding on the above plants during the past week. Apparently it is far less abundant than last spring though very abundant in some vineyards. They are not yet feeding, and the way I detected them was by following behind a man who was pulling brush out of the vineyard, when they arose in swarms. The species is rather abundant in Ulster County. Adults are feeding on raspberry foliage but are not numerous in Chautauqua County. The insects appeared in good numbers and are now changing from their darker orange color to yellow, in Chautauqua County.

New Mexico W. E. Emery (May 7): This insect is more numerous than last year, but no damage has been done so far; foliage is not very far advanced.

GRAPE LEAF-ROLLER (Desmia funeralis Huebn.)

Ohio R. S. McKay (May 19): Work of larvae was first noticeable about May 10. I estimate 10 to 25 per cent infestation.

A WEEVIL (Rhigopsis effracta Lec.)

California W. D. Pierce (May 31): Specimens were sent in by Harry Smith with the report that they were damaging the tender growth of grape vines. So far as I know this is the first charge against this species, which has formerly been reported as from yucca. The specimens are from San Bernardino County. They are probably root weevils.

GRAPE FLEA-BEETLE (Haltica chalybea Ill.)

New York C. R. Crosby and assistant: No infestation of this insect has been observed or reported. The buds are now swollen to such an extent as to be practically past danger of destruction by this pest at Fredonia in Chautauqua County.

STRIPED TREE CRICKET (Oecanthus nigricornis Walk.)

Ohio H. A. Gossard (May 11): On March 5 we received from Geneva, Ohio, eggs of the tree cricket on grape tips.

CURRENT

CURRENT APHID (Myzus ribis L.)

New York C. R. Crosby and assistants: Currant aphids are very few and local as yet in Ulster County, but found generally on opening leaves in Genesee County.

P. J. Parrott (May 5): Found beginning to curl currant foliage at Geneva. (April 19): First newly hatched nymphs observed.

- Delaware C. O. Houghton (April): This aphid is reported attacking currant at Newark, about the same as in an average year.
- Iowa Fred D. Butcher (May 15): Old adults are just giving birth to young. They average 8 to 15 young on each leaf attacked, and about one-fourth of the leaves on each plant have lice present.

IMPORTED CURRANTWORM (Pteronidea ribesi Scop.)

- New York C. R. Crosby and assistants: Larvae first appeared in Nassau County. Infestation is general, but eggs are numerous only in local spots. Worms are hatching. No serious injury is expected in sprayed plantings. Considerable damage is being done to currant bushes by the imported currantworm.
- Delaware C. O. Houghton (April 23): This species is appearing in smaller numbers here this spring.
- Kansas G. A. Dean (May 22): Within the last two or three days several reports have reached me of the currantworm doing considerable damage to currants in Riley County.
- Nebraska M. H. Swenk (May 15): The imported currantworm was first observed doing damage to gooseberry bushes this spring on May 15.

PECAN

AMBROSIA BEETLES

- Mississippi R. W. Harned (May 18): During the last few weeks we have received at this office quite a number of complaints in regard to ambrosia beetles on pecan trees. This is the first time since 1917 that we have received many complaints in regard to these insects.

PECAN-NUT CASE-BEARER (Acrobasis hebescella Hulst.)

- Georgia and Florida J. B. Gill (May 28): Injury to pecan nuts by first-brood larvae of this insect is reported from DeWitt, Ga., Beconton, Ga., and Thomasville, Ga., but so far the extent of damage is light. Present indications point to a very mild infestation of this insect during this season, while many orchards throughout South Georgia and North Florida have set large crops. No damage has yet been reported by growers from Monticello, Fla., in which section the pecan-nut case-bearer has been more or less destructive to nut crops during the past ten years. Two effective parasites, namely Exorista pyxte Walk. and Habrobracon variabilis Cush., have been reared in numbers from the overwintered larvae which attack the tender shoots of pecan early in spring before the nuts have set. It is generally believed that these two parasites are important factors in the natural control of this pest.

PECAN CASE-BEARER (Acrobasis nebullella Riley)

Georgia and
Florida

J. B. Gill (May 28): During the early spring some unsprayed pecan orchards in North Florida and South Georgia were rather severely damaged by the ravages of the larvae of the pecan leaf case-bearer. It should be stated, however, that the damage is not so serious and extensive this year as it has been in some previous seasons. In orchards sprayed last August and the early part of September there is no appreciable injury to the buds and foliage, and according to our observations and the reports from practical pecan growers this insect has been controlled very satisfactorily. We have perfected quite an effective control on this first-class pest and it is gratifying to note that growers generally are well pleased with results obtained in carrying out our spraying recommendations.

PECAN BUD-MOTH (Proteonteryx bolliana Sling.)

Florida

J. B. Gill (May 28): The larvae of the pecan bud-moth have been reported by nurserymen from Monticello, Fla., as doing serious damage to pecan nursery stock during the present season. This species also infests bearing pecan trees but the injury caused is not of a serious nature. It is quite a serious pest on young orchard pecan trees and pecan nursery stock, however, because the larvae largely confine their attacks to the terminal buds and prevent the trees from making a satisfactory growth. According to some pecan nurserymen, the injury is much worse during a wet spring.

FALL WEBWORM (Hyphantria cunea Drury)

Georgia

J. B. Gill (May 28): At this time the fall webworm is occurring in injurious numbers on pecan trees in this section, and no doubt the second brood will be quite large, causing very serious damage during the summer months. The webs are also seen abundantly on trees other than the pecan, especially wild persimmon and black walnut.

PECAN CIGAR CASE-BEARER (Coleophora carvaefoliella Clem.)

Georgia and
Florida

J. B. Gill (May 28): The pecan cigar case-bearer has occurred in somewhat injurious numbers in pecan orchards around Baldwin, Fla. A light infestation of this insect is also reported from pecan orchards in the Albany, Ga., section.

FIG

THREE-LINED FIG BORER (Ptychodes vittata Fab.)

Louisiana

T. H. Jones (May 15): Mr. Felix Bachemin, Jr., Agricultural Agent for the New Orleans Great Northern Railroad Company, wrote concerning a heavy infestation of borers doing considerable damage to fig trees at several points along the line. Injury is probably due to this species.

ORANGE

PURPLE SCALE (Levidosaphes beckii Newm.)

Louisiana T. H. Jones (May 15): Infested material was received from Amite on April 10 and from Lake Charles on April 20.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Louisiana T. H. Jones (May 15): Infested orange leaves were received from Lake Charles on April 20, and infested leaves of Cape Jasmine from Alexandria on April 6.

CITRUS THRIPS (Scirtothrips citri Moulton)

California California Weekly News Letter Vol. 5, No. 11: All available spraying equipment is now in operation in the citrus groves in Tulare County for the control of citrus thrips and citricola scale. The latter are now hatching in large numbers and a season of generally severe infestations is indicated.

COFFEE

THE HORMIGUILLA (Myrmelachisti ambigua ramulorum Wh.)

Porto Rico R. E. Danforth (May 19): The "hormiguilla", Myrmelachista ambigua ramulorum Wh., considered the worst insect enemy of coffee in Porto Rico, is very abundant in the coffee plantations of this region. It is a small ant, about one-twelfth inch long, with light brown thorax and legs, and shiny black head and abdomen. It makes tunnels both in coffee trees and coffee shade-trees, being here particularly fond of the "guama", Inga laurina, although it attacks trees of several distinct families... It attends a pink mealy bug, Cryptostigma ingae Ferris, in its tunnels in the living coffee twigs. In the same green twig I have found all stages of the mealy bug and larvae and pupae of the ant, in different chambers not far apart. The principal chambers are at the joints, just below the smallest or fruit-bearing laterals. They also tunnel in dead wood, both high and low, in which they also rear their young.

GUAVA

GUAVA LEAFROLLER (Attelabus sexmaculatus Chev.)

Porto Rico R. E. Danforth (May 19): The attelabid beetles, Attelabus sexmaculatus Chev., or guava leaf-roller, is not only abundant on guava but is also conspicuously mutilating the leaves of one of the commonest roadside shade trees here, the "almendro", Terminalia catappa L.

TRUCK - CROP INSECTS

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

- New York Roy Latham (May 5): A few potato beetles are out at the present time at Orient, Suffolk County. Early potatoes are just appearing through the ground. (May 19): Many young plants just above the ground are badly eaten. The beetles are much more abundant than in an average year. The weather is cool and dry. No natural enemies have been observed.
- Maryland J. A. Hyslop (May 14): At Avenel potatoes are just appearing above ground. The first adult of the season was found today.
- Missouri L. Haseman (May 22): Thus far this beetle has not shown up in central Missouri. Scattered migratory specimens were observed as early as May 12, but no complaints have yet been made of beetles on potatoes.
- Texas F. C. Bishopp (May 23): At Dallas, Colorado potato beetles have been present in destructive numbers in many potato patches in this vicinity. The second brood of adults is emerging in numbers and will probably defoliate late potatoes if not poisoned. In some instances late-set tomato plants were destroyed by the bugs. This injury was worst when the tomatoes were planted near potatoes or weeds.

POTATO FLEA-BEETLE (Epitrix cucumeris Harr.)

- New York G. E. Smith (May 18): This insect is abundant in gardens in Orleans County.
- H. C. Hockett (May 18): This insect is found abundantly in the woods in Suffolk County.
- Roy Latham (May 19): At Orient, some plants 2 to 3 inches high are killed in sheltering woods. This insect is more abundant than in an average year and much more than last month. The weather is cool and dry. No enemies have been observed.

A FLEA-BEETLE (Disonycha sp.n.)

- Porto Rico R. E. Danforth (May 19): The new green flea-beetles with orange prothorax, Disonycha sp. n., common on beets and chard, is also attacking white potatoes and turnip leaves.

IMBRICATED SNOOT-BEETLE (Epicaerus imbricatus Say)

- Mississippi R. W. Harned (May 18): Several complaints have been received at this office with regard to the imbricated snout-beetle damaging tomato plants in the southern part of the State.

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli Guen.)

Mississippi

R. W. Harned (May 18): We have received complaints regarding the yellow-striped armyworm from two places in the State. From Lucedale we have received specimens of this insect damaging tomato plants. From Seminary we have received specimens taken from cotton.

CUTWORMS (Noctuidae)

Texas

D. C. Parman (May 19): Severe losses, 75 per cent, have occurred in all gardens in the district of Uvalde caused by several species of cutworms, and most gardens are practically bare or have very straggling stands. The tomato crops to the south have suffered severely, but not so much as the general gardens, on account of better control measures employed.

F. C. Bishopp (May 23): Cutworms of several species have caused considerable damage in truck gardens in the vicinity of Dallas during the past month or six weeks.

SWEET POTATO

TWO-STRIPED SWEET POTATO BEETLE (Cassida bivittata Say)

Mississippi

M. R. Smith (May 10): Adults of this species of beetles are very abundant on plants recently set out in a field belonging to the A. & M. College. As many as six or eight specimens were found on some of the small plants, which were badly riddled as a result.

SWEET POTATO WEEVIL (Cylas formicarius Fab.)

Oklahoma

E. E. Scholl (May 21): It has been reported to this office by the State Board of Agriculture that Cylas formicarius Fab. has been found in sweet potato fields in the counties of Jefferson and Stephens of this State. A further investigation will be made by entomologists of this Department and of the State Board next week.

MOTTLED TORTOISE BEETLE (Chirida guttata Oliv.)

Mississippi

M. R. Smith (May 10): Adults of this species of beetles are very abundant on plants recently set out in a field belonging to the A. & M. College. As many as six or eight specimens were found on some of the small plants, which were badly riddled as a result.

GOLDEN TORTOISE BEETLE (Metriona bicolor Fab.)

Mississippi

M. R. Smith (May 10): Adults of this species of beetles are very abundant on plants recently set out in a field belonging to the A. & M. College. As many as six or eight specimens were found on some of the small plants, which were badly riddled as a result.

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CABBAGE

CABBAGE WORM (Pontia rapae L.)

- New York Roy Latham (May 5): Cabbage butterflies have been flying at Orient, Suffolk County, since April 9, but are not common.
- Henry Dietrich (May 23): A pair of cabbage butterflies were noticed at Appleton on May 17 for the first time this season.
- W. D. Mills (May 14): First adults were seen in Nassau County on this date.
- Delaware C. O. Houghton (April): A moderate number of this species have been observed on the wing at Newark, first appearing April 6. It is less abundant than in an average year.
- Virginia Herbert Spencer (May 9): To date the cabbage crop has had no insect outbreaks of importance, and it is doubtful if any will occur this spring, since the crop is practically made. It is rather unusual not to have reports of imported cabbage worms, but none have come to the attention of this station.

CABBAGE MAGGOT (Phorbia brassicae Bouche)

- New York C. R. Crosby and assistants: Flies were observed May 4 in moderate numbers both in cold frames and in the field in Nassau County. Apparently this pest has been markedly held in check by the cold weather in Suffolk County. Flies are rather abundant around Phelps and Stanley, Ontario County.

CABBAGE APHID (Brevicoryne brassicae L.)

- Virginia Herbert Spencer (May 9): To date the cabbage crop has had no insect outbreaks of importance and it is doubtful if any will occur this spring since the crop is practically made. It is rather unusual not to have reports of lice, but none have come to the attention of this station.

HARLEQUIN CABBAGE BUG (Murgantia histrionica Hahn)

- Missouri Neely Turner (May 20): About 35 per cent of the cabbage crop is damaged at Poplar Bluff in southeastern Missouri. Abundance is about double, compared with an average year. No natural enemies have been observed.

STRIPED FLEA-BEETLE (Phyllotreta vittata Fab.)

- New York W. D. Mills (April 15-May 15): This insect was first observed doing serious damage in Nassau County to seedlings in the cabbage seed bed and has since been observed in several seed beds. (May 3): Severe injury to cabbage seedlings occurred in one seed bed in Nassau County.
- E. W. Pierce (May 18): Flea-beetles are rather thick around

Stanley and a few around Phelps, in Ontario County.

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

- New York C. C. Wagoner (May 18): Injury in one place amounted to 30 per cent. Infestation is general but is held down with dust in Ulster County. (May 19): Some growers have failed to make an attempt to control strawberry weevils and in such cases considerable damage is caused. In other fields the control appears to be good.
- P. D. Rupert (May 5): The first beetles were seen in Dutchess County on this date. (May 19): Work is progressing in control of the strawberry weevil.

STRAWBERRY FLEA-BEETLE (Ealtica ignita Ill.)

- New York P. D. Rupert (May 18): Moderate infestation is reported in the Tivoli section of Dutchess County.

STRAWBERRY CROWN-BORER (Tyloclerma fragrans Riley)

- Missouri L. Haseman (May 1-8): This insect is reported in greater abundance in southwestern Missouri than in an average year.

FIKE ANT (Solenopsis geminata Fab.)

- Mississippi M. R. Smith (May 8): This species of ant has been complained of as being numerous and troublesome in flower beds and in strawberry patches. Specimens have been sent to this office from Clarksdale, Poplarville, and other places.

SLUG (Species Undetermined)

- Louisiana T. H. Jones (April 21): Slugs have been noted doing considerable damage to the fruit of strawberry at Baton Rouge and have also been taken under conditions indicating that they were injuring corn plants before they came above the surface of the ground. We have also received complaints of injury to strawberries by slugs at Denham Springs and to mustard and turnip greens at New Iberia. Cool, moist weather probably is responsible for abundance of slugs.

STRAWBERRY LEAF-BEETLE (Paria canella Fab.)

- New York C. C. Wagoner (May 5): Adults have been found abundantly in a planting of several acres in Ulster County. (May 18): This species is rather abundant in some locations; infestation is general but not serious.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

- Massachusetts A. I. Bourne (May 22): Asparagus beetles began to show up in the eastern part of the State about the first few days of May and are about as abundant as last year. One report from the county agent of Middlesex County reports them as very numerous in his county and, apparently, worse than last year. C. 12-punctata also is present.
- New York P. D. Rupert (May 18): Moderate infestation is noted in Dutchess County.
- Maryland E. N. Cory (May 19): Both species of asparagus beetle, Crioceris asparagi and C. 12-punctata L. are doing considerable damage to cutting beds and excessive damage to newly planted asparagus at Cambridge. They are much more abundant than in an average year.
- E. A. Hyslop (May 15): Very heavy infestation has been observed at Avonel, eggs practically lining every twig and leaf. (May 27): The beetles are now defoliating asparagus. Larvae in some cases are full-grown.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

- Alabama F. L. Thomas (May 8): First record of the bean beetle was made at Auburn, in Lee County, and about 50 miles south of the known infested area of 1922.
- Mississippi R. W. Harned (May): We have just discovered this pest at Eastman, near Fulton. (May 12): On May 8 one of our inspectors found two infested gardens at Eastman in Itawamba County, which is only 14 miles from the Alabama line.

BEAN LEAF-BEETLE (Cerotoma trifurcata Foerst.)

- Maryland J. A. Hyslop (May 25): All leaves on beans are badly riddled, with from 3 to 6 beetles to each plant. Infestation is very much more serious than in an average year.
- Illinois S. C. Chandler (May 12): This insect is badly riddling the leaves of string beans in many fields. It is present in practically all fields and nearly every plant is more or less eaten.
- Mississippi M. R. Smith (May 19): This pest is doing appreciable injury to beans in this section. The leaves of the plants are being badly riddled by the beetles, and in some cases it has been necessary to poison for them.

SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Mississippi R. W. Harned (May 18): Almost daily we receive complaints from every section of the State regarding damage to beans, melons, etc., caused by the southern green plant-bug.

BEAN WEEVIL (Bruchus obtectus Say)

New York G. E. Smith (April 16): This pest has been unusually abundant in Orleans County.

PLANT-LICE (Aphididae)

Mississippi R. W. Harned (May 18): Almost daily we receive complaints from every section of the State regarding damage to beans, melons, etc., caused by plant-lice or aphids.

Pachystethus lucicola Fab.

New York C. R. Crosby: At Glen Head many beetles were found eating holes in the leaves of garden beans.

PEAS

PEA APHID (Illinoia pisi Kalt.)

New York W. D. Mills (May 19): This insect was first found in some numbers on May 18.

Virginia Herbert Spencer (May 9): The pea louse is occurring in numbers in the tidewater section of Virginia and damage has been reported by several farmers in the vicinity of Norfolk.

Michigan R. H. Pettit (May 26): Yesterday I received word that the green pea louse was endangering and threatening the fields of alfalfa near Paw Paw. Today I received specimens of alfalfa completely loaded with the green pea louse from Allegan.

Ohio T. H. Parks (May 17): A few aphids have been found on young peas at Columbus. They are also common on sweet clover on the University Farm at Columbus. This is one legume pest the plant seems to accommodate. They are plentiful on red clover, but no visible damage is seen. Some Callipterus trifolii are among them. The weather was very dry during the last of April and has been rainy and cool the past 10 days. Specimens were sent in from two counties in northwestern Ohio with the statement that they were seriously damaging alfalfa. This aphid is present on alfalfa at Columbus, but no serious damage has been done.

- Kentucky H. Garman (May 16): Severe damage to alfalfa was observed in Monroe County on May 14, and in Gallatin County May 14. We have never before had this insect reported as injurious to alfalfa.
- Mississippi R. W. Harned (May 18): The pea aphid is making its appearance in Mississippi at the present time. Specimens have been taken from gardens at A. & M. College, Starkville, and Poplarville.
- Michigan R. H. Pettit (May 23): I have a report from the county agent at Cassopolis, who found specimens of plant-lice on alfalfa which prove to be the green pea louse. He reports them as having done considerable damage to alfalfa. (May 26): Yesterday I received word that the pea louse was endangering and threatening the fields of alfalfa near Faw Paw. Today I received specimens of alfalfa completely loaded with the green pea louse from Allegan.
- Iowa Fred D. Butcher (May 12): The county agent of Wapello County reports green aphids on 20 acres of alfalfa, with the leaves wilting and turning yellow. This is the first report in the State this year.
- Missouri L. Haseman (May 8): I am forwarding to you under separate cover samples of a green plant-louse that is invading the alfalfa fields in great abundance near Malta Bend. You will observe the high mortality caused, apparently, by some fungus disease, which leads me to believe that this pest will not do further serious damage this season. (May 16): We have had no further serious reports on the pea aphid on alfalfa in the last few days. In fact, judging by the condition of the samples received about the 8th, I am inclined to believe that the species in some fields at least is giving up to the parasitism, both by a fungus and by Hymenoptera. Lady-beetles and syrphid flies were not at all abundant in the sample examined, but hymenoptera and fungi seemed to be very prevalent on the samples. I dare say the inclosure of a few hours in the container may have influenced the fungus development, but if the pest in the open field shows anything like the degree of parasitism which the samples of a few hours in inclosure in the mason fruit jar showed, I feel sure the fungus is doing good work. (May 22): Scattered complaints continue to arrive from along the course of the Missouri River, from central Missouri to Kansas City.
- Kansas Roger C. Smith (May 3): I wish to report an outbreak of the pea aphid (Macrosiphum pisi) on alfalfa in the Kaw Valley. I have spent a part of two weeks studying this outbreak, and conducting control experiments. The first report we had was from the farm of the Boys' Industrial School, where about 60 acres were found to be heavily infested, at least half of which is seriously injured. I found infestations in other fields within a radius



of a mile from this one; otherwise fields from about 3 miles north of Topeka to Manhattan have only a few pea aphids in them and, in such cases, they are doing no appreciable damage. From Topeka to Kansas City, Kans., there are about half a dozen fields with spots that have been seriously injured. The heaviest infested fields are near Lawrence, Midland, Loring, and Bonner Springs. North of Kansas City, in the river bottoms, there are five fields of about 15 acres each that are heavily infested, three of which show serious injury. One of these fields, I fear, is a total loss. There was much crab grass in the field last fall and very good overwintering conditions were provided. The aphids reached outbreak numbers early and practically killed the alfalfa before it reached 6 inches height. Around Bonner Springs I visited four fields showing a heavy general infestation, each from small areas where the severest injury was located. At this writing the winged forms are spreading rapidly to other fields. I found garden peas heavily infested. The fungous disease has started in practically all of the worst infested fields, there being one to several pinkish or brownish dead aphids on nearly every stem. The ladybird beetles, the two-spotted, nine-spotted, and Ceratomegilla fuscilabris, and a lacewing fly, Chrysopa plorabunda, are present in fair numbers and increasing appreciably from week to week. The weather conditions are favorable now for the development of the fungous disease and the predators, so that we believe the peak of the outbreak has been passed.

Oklahoma E. E. Scholl (May 21): The pea aphid has been reported to be doing considerable damage to alfalfa in the western part of Oklahoma. These reports will be verified next week. A slight infestation was found by myself yesterday afternoon 4 miles west of Perkins, in Payne County.

California (See Alfalfa):

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

New York H. C. Hockett (April 24): At Riverhead adults are to be found in sheltered situations in the woods.

Virginia Herbert Spencer (May 9): During the past week this insect was destructive to outdoor cucumbers in the neighborhood of Portsmouth. The cucumbers grown in cold frames were not affected.

Kentucky H. Garman (May 16): Infestations were noted in Lee County April 30; in Russell County April 30; in Owsley County May 11, and in Whitley County May 14. This pest seems to be exceptionally common and destructive in the eastern end of the State.

Louisiana T.H. Jones: The following reports received, without specimens, probably refer to this species, though none have been noted in the vicinity of Baton Rouge: April 28, the county agent of Natchitoches Parish writes: "Striped bugs are trying to eat up our watermelons, cucumbers, and muskmelons." (April 29): The county agent of DeSoto Parish wrote that "bugs" that "must be the striped cucumber beetles" were injuring watermelon vines. (May 4): Agriculturist from Reserve, La., wrote for information as to the control of the "striped cucumber beetle, that is attacking about 2 acres of melons that we have under observation."

Mississippi R.W. Harned (May 18): Almost daily we receive complaints from every section of the State regarding damage to beans, melons, etc., caused by the striped cucumber beetle.

New Mexico W.E. Emery (May 7): Some fields were entirely taken, others not so badly infested.

A SPRINGTAIL (Sminthurus sp.)

Virginia Herbert Spencer (May 9): During the past week springtails were destructive to outdoor cucumbers in the neighborhood of Portsmouth. The cucumbers grown in cold frames were not affected.

MELONS

COTTON APHID (Aphis rossii Glov.)

Mississippi R.W. Harned (May 18): Almost daily we receive complaints from every section of the State in regard to plant-lice or aphids doing damage to beans, melons, etc.

SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Mississippi R.W. Harned (May 18): Almost daily we receive complaints from every section of the State in regard to the southern green plant-bug doing damage to beans, melons, etc.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Maryland J.A. Hyslop (May 10): We have the worst outbreak in the past five years in southern Montgomery County.

Kentucky H. Garman (May 16): Infestations were noted in Lee County April 30; in Russell County April 30; in Owsley County May 11, and in Whitley County May 14. This pest seems to be exceptionally common and destructive in the eastern end of the State.

Mississippi R.W. Harned (May 18): Almost daily we receive complaints from every section of the State regarding damage to beans, melons, etc., caused by the striped cucumber beetle.

MISCELLANEOUS FEEDERS

SQUASH BUG (Anasa tristis DeG.)

New York Henry Dietrich (May 23): Adults were noticed May 17 just emerging from hibernation.

STRIPED FLEA-BEETLE (Phyllotreta vittata Fab.)

Iowa Carl J. Drake (May 10): On May 5, I received a few specimens of the flea-beetle, Phyllotreta vittata Fabr., from Montrose. These beetles were ~~destroying~~ spinach and radishes in gardens.

CARROT RUSTFLY (Psila rosae Fab.)

New York C. R. Crosby (April 20): Infested carrot was received on this date from Whitesville.

COMMON MEALYBUG (Pseudococcus citri Risso)

Indiana B. A. Porter (May 24): Mealybug injury to canteloupes planted in seed beds was noted at Vincennes April 30. Many of the plants were reported as being killed by this insect which seems to be a new pest in that section.

CUTWORMS (Noctuidae)

Massachusetts A. I. Bourne (May 22): Cutworms have been reported from the eastern part of the State as about normally abundant and apparently causing the usual annoyance to market gardeners in that section of the State. The first report we have received of them in that section was about the 10th of May.

North Carolina P. Luginbill (May 11): Peas, cabbage, tomatoes, and other crops at Columbia have been damaged. The cutworms appear to be more numerous this year than for many years past.

A WEEVIL (Listronotus near tereticollis Lec.)

California W. D. Pierce (May 31): A specimen of Listronotus which is close to tereticollis Lec., but in bad shape for determination, has just been received from Stockton, through Prof. Essig, with the report it it was bred from tomato stems.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

Mississippi B. R. Coad (May 17): Mr. Barber, of New Orleans, La., states that while waiting for a train he examined 60 or 70 cotton plants in a small field close to the railroad station at McNeill, in Pearl River County, finding 6 boll weevils. He

also states that indications were that many weevils were present in this field.

- Louisiana B. R. Coad (May 16): A single specimen was found while laying off plots for experimental work at Tallulah on May 16.
- Oklahoma E. E. Scholl (April 13): Four hibernation cages containing 500 weevils each were used to determine a percentage mortality of boll weevils in Oklahoma during the winter of 1922-23. These were located at Stillwater, Shawnee, Antlers, and Durant. Counts this spring indicate that an average of 0.2 of 1 per cent of boll weevils going into hibernation in the fall of 1922 were living the latter part of March, 1923. During the winter of 1921-22 the percentage of living weevils was 1.29. This shows a material increase in the winter mortality over the previous winter.
- Texas T. C. Barber (May 18): One field of stubble or volunteer cotton was seen today at Brownsville which contained a maximum infestation; every square being punctured and as many as 5 adults being observed in one blossom. Recent hot dry weather, however, has caused very heavy mortality in fallen squares and bolls. In general, the boll weevil infestation has been light to date, and climatic control has been very marked.
- B. R. Coad (May 1): Reports have been received from Edinburg that weevils were appearing as fast as squares on April 26. Damage to crop was not stated. (May 11): Information was received by wire on this date from Mission of serious damage to cotton. (May 21): Mr. Bondy reports that infestation counts on experimental plats made on May 15, 16, 17, and 23 indicate boll weevils present in fairly large numbers.

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli Grote)

- Mississippi R. W. Harned (May 18): We have received complaints regarding this insect from two places in this State. From Lucedale we have received specimens of this insect damaging tomato plants. From Seminary we have received specimens taken from cotton.

ST. ANDREW'S COTTON STAINER (Dysdercus andreae L.)

- Porto Rico R. E. Danforth (May 19): The St. Andrew's cotton stainer is exceedingly abundant now on the cotton to the south of us, about Lajas and Boqueron.

TOBACCO

TOBACCO FLEA-BEETLE (Eotirix parvula Fab.)

- Kentucky H. Garman (May 16): This insect is injurious to plant beds in Fayette County.
- Maryland J. A. Hyslop (May 23): The tobacco flea-beetle is damaging plant beds in southern Maryland.

TOBACCO THRIPS (Frankliniella fusca Hinds)

Florida F. S. Chamberlin (May 18): The tobacco thrips, Frankliniella fusca, is becoming rather numerous here at the present time. The increase of this pest and the resulting damage will depend largely upon the rains.

. SOUTHERN TOBACCO HORNWORM (Protoparce sexta Joh.)

Florida F. S. Chamberlin (May 18): The southern tobacco hornworm, Protoparce sexta, is appearing in very limited numbers. Emergence has apparently been delayed by the cool temperatures this spring.

. SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Florida F.S.Chamberlin (May 18): The southern green plant-bug is now common in tobacco shades and is doing some damage.

SUGAR CANE

. . SUGAR-CANE BORER (Diatraea saccharalis Fab.)

Louisiana T.E.Holloway and W.E.Haley (May 3): Larvae of the first, second, and third instars have been noted in corn and sugar-cane plants (first generation) at New Orleans.

F O R E S T A N D S H A D E - T R E E I N S E C T S

MISCELLANEOUS FEEDERS

PERIODICAL CICADA (Tibicen septendecim L.)

BROOD XIV (SEVENTEEN-YEAR RACE).

Maryland J.A.Hyslop (May 31): I found a cast skin on the flower head of a mountain laurel in my pasture, at Avanel, this morning. Being on the flower head, it necessarily emerged within the past two weeks. This may be a straggler of Brood XIV due here this year, but no swarm has appeared as yet.

Virginia W. McAtee (May 25): I collected a single individual today at Maywood. No brood has been observed.

PERIODICAL CICADA (Tibicen septendecim L., race
tredecim Walsh and Riley)

. . BROOD XXII (THIRTEEN -YEAR RACE).

Mississippi R.W.Harned (May 23): We have already received specimens this year of the periodical cicada from four counties, Adams, Jefferson, Claiborne, and Warren. You will note that they have not been

1. The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation

2

previously reported from Warren County, but a boy at Bovina, Warren County, sent us several hundred specimens. We are making a special effort to try to get them from other counties, if they are appearing in other counties.

G. H. Kent: The 1923 brood of the periodical cicada appeared in Franklin County in large numbers during the early part of May. I have observed this brood in 1871, 1874, 1897, and 1910. I have also observed that stragglers occur the year following each brood in quite considerable numbers.

Louisiana T. H. Jones (May 8): Under date of May 9, I sent Dr. Howard specimens of what may be called the periodical cicada collected at Magnolia, La., on May 8.

BROWN-TAIL MOTH (Euproctis chrysorrhoea L.)

Massachusetts A. I. Bourne (May 22): The brown-tail moth in Essex County is reported as occurring in very small numbers -practically of no consequence in orchards. The same is true of orchards in Littleton, in Middlesex County, no increase over the numbers occurring last year having been found. In northern Worcester County (Harvard) the infestation is found to be very slight. There is a probable increase estimated at 5 per cent over last year's occurrence. Much of the same report has been received from Lunenburg in the same county, a slight increase being apparent from last year's numbers. In Plymouth and Bristol Counties they are reported as being, thus far, of very little consequence, and not being found more abundant than last year.

GIPSY MOTH (Porthetria dispar L.)

Massachusetts A. I. Bourne (May 22): Gipsy moths are reported as very abundant from nearly all sections of the State normally infested. From Essex County (Salisbury) they have been reported as very abundant. They began to hatch about May 10, and were about as abundant as last year. In the town of Littleton, in Middlesex County, they are reported to be abundant but no more so than last year. From Harvard, in northern Worcester County, they are reported as very abundant- slightly worse than last year. From Plymouth and Bristol Counties the reports indicate that there are no more than last year, and in some cases they are greatly reduced in numbers from 1922. On the Cape, generally, they seem to be practically as abundant as last year.

FOREST TENT CATERPILLAR (Malacosoma disstria Huebn.)

West Virginia W. E. Rumsey (May 12): Wild cherry trees near Cherry Run are chiefly attacked by this insect.

EVERGREEN BAGWORM (Thyridopteryx ephemeraeformis Haw.)

New York Henry Bird (May 19): Eggs are as yet unhatched, but indications are that there will be a greater invasion from this species in the locality of Rye than has been experienced for some time.

Missouri L. Haseman (April 16-May 8): Usual spring complaints are made in various sections of the State where abundant cocoons are attracting attention on arborvitae trees, cedars, and evergreens. Some fruits are being attacked.

ELM

ELM LEAF-BEETLE (Galerucella luteola Mull.)

Maine E. M. Patch (May 9): Hibernating adults were found in great numbers in an open chamber at Augusta.

New York Henry Bird (May 19): Hibernating adults are very scarce, and there promise to be no more than random, isolated colonies of this insect at Rye, as was the case in 1922. Ordinarily by this date one sees many of the beetles about, but so far I have noted only one specimen.

HICKORY

HICKORY BARK-BEETLE (Scolytus quadrispinosus Say)

Michigan R. H. Pettit (May 15): On May 15, specimens of the hickory bark-beetle were brought in from near Ypsilanti. A section of hickory was brought in showing the workings of this Scolytid, and many dead trees were reported on farms. (I advised the immediate cutting of all trees badly affected, the burning of the tops, and the sinking of the logs in water).

MAPLE

WOOD LEOPARD MOTH (Zeuzera pyrina Fab.)

New Jersey H. B. Weiss (May 15): One partly grown larva was found in maple at Trenton.

FALL CANKERWORM (Alsophila pometaria Harr.)

Ohio H. A. Gossard (May 11): On March 20, the fall cankerworm moth was received from Willoughby on maple.

APHIDS (Aphididae)

New York Roy Latham (May 5): Aphids are very abundant at Orient, Suffolk County, on the leaf buds of maple trees. They were first seen on May 1. The migrating warblers are again feeding on them and probably will control this insect, as in 1922.

OAK

GALLS (Cynipidae)

Georgia O. I. Snapp (April 20): Cynipid galls, thought to be the alternate generation of Andricus coronus, were collected from water oak trees on the streets of Fort Valley.

OAK LECANIUM (Lecanium quercifex Fitch)

- South Carolina J. A. Berly (May 24): This scale insect appears every spring in this State, and at Saluda and Hodges it appeared on water oak in numbers sufficient to warrant control measures.
- Georgia O. I. Snapp (April 19): An exceedingly heavy infestation of this Lecanium was noted on water oaks at Reynolds. The owner of the tree is using a lubricating-oil emulsion.

PINE

A LECANIUM (Lecanium numismaticum Pettit & McDaniel)

- Mississippi R. W. Harned (May 18): A species of Lecanium new to this State has been collected on pine at Hazlehurst. Miss McDaniel, of the Michigan Agricultural College, has identified this species as L. numismaticum.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

- New York C. R. Crosby (April 20): At Spring Valley trees are badly infested. (May 7): Infested pine leaves were received from Linwood.
- Ohio H. A. Gossard (May 11): The pine scurfy scale was received February 19, from Lorain on pine.
- Indiana J. J. Davis (May 22): Eggs of this insect began to hatch at LaFayette on May 21. Scales sprayed with 2 per cent lubricating-oil emulsion are hatching just as vigorously as those not treated. Apparently, the emulsion was ineffective against the eggs.
- Nebraska M. H. Swenk (April 15-May 15): Several reports of injury by the pine leaf scale were reported on ornamental spruced and pines.

PINE BARK-LOUSE (Chermes pinicorticis Fitch)

- New York M. D. Leonard (May 14): Specimen of infested bark was received from Williamsville with request for control measures. (May 15): At Albany an ornamental pine on a front lawn is badly infested.

WESTERN PINE BEETLE (Dendroctonus brevicornis Lec.)

- Oregon and California Monthly News Letter, Bureau of Entomology, Vol. 108, (April): On the Southern Oregon-Northern California Cooperative Control Project, to control an epidemic of the western pine

beetle, F. P. Keen reports that spring work has already started and that five camps are now in operation with over 100 men on the payroll. Other camps will be opened as fast as snow conditions and available labor supply will permit. Two hundred men are probably at work at the time this is being written.

A SATURNID MOTH (Coloradia pandora Blake)

Oregon

Monthly News Letter, Bureau of Entomology, No. 108, (April): J. E. Paterson has reported recent defoliations of pine timber on the Klamath Indian Reservation by the larvae of a moth, Coloradia pandora Blake. Areas of heavy defoliation of pine were found. The insect can be controlled by the use of fire during the feeding period of the larvae. Ground debris is fired and burned under the infested trees, which caused the caterpillars to become stupified and fall to the ground. Great precautions should be taken to prevent forest fires. The pupae of the moth were used as food by the Klamath and Modoc tribes of Indians and were considered a delicacy when roasted. It is believed that this is the first record of the use of pupae as food by western Indians.

POPLAR

A BUCK MOTH (Hemileuca nevadensis Stretch)

Nebraska

M. H. Swenk (April 15-May 15): The presence of an abundance of the egg rings of Hemileuca nevadensis in a poplar grove in Cheyenne County was reported May 4. The eggs hatched in our Laboratory at Lincoln on May 14. Last year, for the first time of which we have a record, this caterpillar proved injurious to cottonwood and orchard trees in this State, the injury being in Lincoln County.

SPRUCE

SPRUCE BUDWORM (Harmodora fumiferana Clem.)

Michigan

R. H. Pettit (May 23): I report the presence of the spruce budworm on spruce sent in from Fosters. Miss McDaniel reports the emergence of adult moths this morning. This emergence is hastened no doubt, by the fact that they were kept in the insectary from the tenth instant until the present time.

INSECTS ATTACKING GREENHOUSE
AND ORNAMENTAL PLANTS

LAWNS

ANTS (Formicidae)

Nebraska

M. H. Swenk (April 15-May 15): There has been much complaint, during the period covered by this report, of injuries by ants in lawns in the larger cities of eastern Nebraska.

A BEE (Andrena erythrogaster Ashm.)

Indiana H. J. Davis (May 24): Specimens of Andrena erythrogaster Ashm., (Frison determination) were received from Shoals on May 1, being reported as digging into a lawn to such an extent that they were disfiguring the lawn and called for control measures.

MISCELLANEOUS

EUONYMUS SCALE (Chionaspis euonymi Const.)

Delaware C. O. Houghton (April): This species appears to be increasing in numbers in this State. Cuttings from very heavily infested plants have recently been brought in for determination of the pest.

BLACK PLANT-BUG (Irbisia brachycerus Uhler)

California H. E. Burke (May 21): Swarms from grasses to many cultivated shrubs and plants, as dahlia, buddleia, are causing severe damage.

JAPANESE BEETLE (Popillia japonica Newm.)

New Jersey Monthly News Letter, Bureau of Entomology, No. 108 (April): C. H. Hadley, in charge of the Japanese beetle laboratory of the Bureau at Riverton, writes that recent examinations in the field have shown no appreciable grub mortality as a result of weather conditions during the winter just past. Occasional spots have been found where there has been comparatively slight mortality during the winter, but the mortality has been so low as to have no practical importance. A material increase in density of infestation by the beetle throughout the heavily infested area, and probably a corresponding increase in density throughout the entire infested area, may therefore be anticipated for the coming season.

COTTON RED-SPIDER (Tetranychus telarius L.)

Georgia O. I. Shapp (May 1): Red-spiders have been the cause of severe injury to ornamental plants in the parks of Fort Valley.

CHRYSANTHEMUMS

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hycosaea Loew.)

Connecticut W. E. Britton (April 10): This insect has been found on small plants under glass at Rowayton.

Ohio H. A. Gossard (May 11): On January 17, we received this pest from Cleveland, attacking chrysanthemums.

ARBORVITAE

ARBORVITAE LEAF-MINER (Axyresthia thuella Pack.)

Connecticut W. E. Britton (May 17): This insect is reported as seriously injuring arborvitae around Stamford and New Canan in Fairfield County. It is much more abundant than in the average year.

MAGNOLIA

CHAFF SCALE (Parlatoria persandii Comst.)

Georgia O. I. Snapp (May 1): This scale, determined by Mr. H. Morrison, is heavy on magnolia twigs and foliage at Fort Valley.

HOLLY

A BLISTER BEETLE (Macrobasis torsa Lec.)

Mississippi R. W. Harned (May 18): Some blister beetles, taken on holly trees by an inspector at Poplarville, proved to be Macrobasis torsa Lec., a species that has never before been collected in this State.

BOXWOOD

BOXWOOD LEAF-MINER (Monarthron albus buxi Labou.)

New York Mr. Beutenmuller (May 21): During 1922 many thousands of boxwood plants in Woodlawn Cemetery, at Woodlawn, were badly infested. Apparently, the authorities wish to take vigorous action against this pest this season.

CANNA

LESSER CANNA LEAF-ROLLER (Geshna cannalis Quaint.)

Mississippi R. W. Harned (May 18): The lesser canna leaf-roller has been attracting considerable attention in this State during the past few weeks.

JASMINUM

WHITEFLIES (Aleurodidae)

Georgia O. I. Snapp (May 1): Whiteflies have damaged cape jasmines considerably in the vicinity of Fort Valley.

INSECTS AFFECTING MAN AND DOMESTIC

ANIMALS

MAN

SALT-MARSH MOSQUITO (Aedes sollicitans Walk.)

New York Roy Latham (May 5): The salt-marsh mosquito were first troublesome on April 15 in Suffolk County.

Henry Bird (May 19): The salt-marsh mosquito has not been observed this year at Rye. It is of little consequence at the present time in this locality on account of a strenuous campaign against it some years back. Fresh-water species are not noticeable on the wing at this date, although during the past few days Aedes sollicitans Walk. has been emerging.

YELLOW-FEVER MOSQUITO (Aedes aegypti L.)

Louisiana W. V. King (May 25): Adults were troublesome about houses by the middle of May. This is unusually early for this locality, Madison Parish, and Mound, La., as the species does not usually overwinter here.

Texas F. C. Bishopp and assistants: Reports have been received that adult yellow-fever mosquitoes were observed in the vicinity of Galveston and Houston early in May. No specimens were positively identified. No adults of this species have been observed in Dallas.

MALARIA MOSQUITO (Anopheles quadrimaculatus Say)

Louisiana W.V.King (May 25): The malaria mosquito has not been found in troublesome numbers by the last of May. This is a month of six weeks later than usual and is due to a cool stormy spring. The recorded rainfall for this locality, Madison Parish, and Mound, La., since the first of the year is 45 inches.

FLEAS (Siphonaptera)

Missouri L. Haseman (May 8): The usual spring complaints from various sections of Missouri have been received, abundance as compared with last month becoming worse.

Texas F. C. Bishopp (May 25): Numerous reports of the infestation of houses and yards by cat and dog fleas have come to the laboratory during the past three weeks. Investigation of a number of these show that the cat flea (Ctenocephalus felis Bouche) is the predominant form. No human fleas Pulex irritans L., have been taken in connection with these infestations at Dallas.

BLACK FLY (Simulium sp. prob. pecuarum Riley)

Louisiana T. H. Jones (May 10): This fly is common enough, especially early in the morning and late in the afternoon, to cause considerable annoyance.

CHIGGERS (Trombicula tlalzahuatl Murray)

North America Monthly News Letter, Bureau of Entomology, No. 108 (April, 1925): The question is often asked how many species of chiggers there are in North America. Based on the material submitted for identification through the channels of the Bureau and the National Museum, Dr. Ewing finds that there is only one common species in North America. This species is Trombicula tlalzahuatl, and is generally distributed in North America, and from the Atlantic Ocean to the Rocky Mountains.

Texas F. C. Bishopp (May 23): Redbugs or chiggers, which first began annoying man about May 1, have greatly increased in numbers during the past two weeks.

CATTLE

OX WARBLE (Hypoderma bovis DeG.)

New Hampshire P. R. Lowry (May 1): Ox warble infestation is light but general in the vicinity of Durham.

New York R. W. Wells (April 21): The earliest reported activity of the warble fly was received from the locality of Middletown.

SCREWORM (Chrysomya macellaria Fab.)

Texas O. G. Babcock (May 16): This insect has been on a gradual increase since the beginning of the month. Catches in traps show for the last week approximately 50 per cent screwworm flies. Very few cases of screwworm have been reported to date. The hot weather has apparently tended to increase this species at Sonora and in west Texas.

D. C. Parman (May 19): Cases of screwworms have not increased during the month to any extent, but in a few instances where cattle have been branded there are a good number of cases.

F. C. Bishopp (May 23): Screwworm flies are gradually increasing in numbers about slaughterhouses, but comparatively few cases of infestation in animals have been observed.

HORN FLY (Hematobia irritans L.)

- New York R. W. Wells (April 21): This is the earliest appearance of the horn fly this season.
- Louisiana T. H. Jones (May 12): Mr. W. G. Bradley, Assistant Entomologist of the Experiment Stations, reports the horn fly as being more numerous at the L. S. U. dairy farm than at any time this year.
- Texas O. G. Babcock (May 16): In west Texas, in the Sonora District, flies are fairly numerous, 150 to 250 per animal, gathering a little about the horns. For the past three weeks the horn flies have been on a gradual increase, in spite of the hot dry weather that has prevailed for the past two weeks.
- D. C. Parman (May 19): At Uvalde, the numbers of this pest are about the same as last month or slightly less (500 to 3,000 per animal).
- F. C. Bishopp (May 21): Horn flies have increased in May at Dallas, as is normal in this section. Much annoyance is being caused by them and dairymen are using sprays considerably.

A HORSEFLY (Tabanus pumilus Macq.)

- Louisiana T. H. Jones (May 19): During the latter part of April and the early part of May this species was common, especially on the ears of live stock, in the vicinity of Baton Rouge. It was the most common and injurious species observed on live stock during this period.

A HORSEFLY (Tabanus rubescens Bellardi)

- Texas D. C. Parman (May 19): The green-heads are appearing in the mountains at Uvalde in noticeable numbers (0 to 5 on animals). The first appearance was about May 10. The eggs were found in small numbers on the stones in the rivers on May 17.

STABLE FLY (Stomoxys calcitrans L.)

- Texas F. C. Bishopp (May 23): Stable flies have increased materially during the last three weeks at Dallas. In some instances the number of flies per animal ranged from 100 to 300.

D. C. Parman (May 19): Quite an outbreak of the straw-stack or stable fly has been reported at Sabinal, 25 miles east of Uvalde, in the farming district. The increase at Uvalde has been noticeable, but rarely more than 5 to 25 flies are on an animal at one time.

BLACK BLOW-FLY (Phormia regina Meig.)

Texas O. G. Babcock (May 16): Very few cases of wool maggots have been reported to date in Sonora, Edwards Plateau. Sheep are nearly all sheared, which is an important factor in avoiding damage.

O. G. Babcock (May 16): Phormia regina has been more abundant than usual for the past three weeks, with very heavy catches in traps; but the sudden hot and dry weather is proving detrimental, with a corresponding decrease in numbers and a contrary increase in numbers of the screwworm fly.

HOUSE FLIES (Musca domestica L.)

Texas F. C. Bishopp (April 23): There has been no material increase in house flies during the last month at Dallas. Numbers are now about normal.

A GNAT (Culicoides biguttatus Coq.)

Louisiana T. H. Jones (April 11): Prof. O. W. Rösswall of the Louisiana State University reports this species, which was determined by Dr. J. M. Aldrich, as being very abundant on the udder of a cow late in the afternoon of this date, and also biting the collector.

POULTRY

BARN-SWALLOW BUG (Oeciacus vicarius How.)

Ohio H. A. Gossard (May 11): On January 17, we received from Westerville, Ohio, the barn-swallow bug captured from a poultry house.

CHICKEN LICE (ALL SPECIES)

Texas F. C. Bishopp (May 23): Chicken lice, especially Menopon bisereatum Pidgeon and heterorhynchus Nitzsch are present in about normal numbers. Losses this spring, especially among young chicks, have been materially reduced, owing to the more general use of sodium-fluorid on the fowls.

CHICKEN MITE (Dermanyssus gallinae Redi)

Texas F. C. Bishopp (May 25): Several very heavy infestations of poultry houses by chicken mites have been reported in this district. Some loss among young chicks and through setting hens being forced to abandon their nests have been brought to our attention. The abundance of the species is probably no greater than normal at Dallas.

CHIGGERS (Trombicula tlalzahuatl Murray)

Texas F. C. Bishopp (May 23): Young chickens are reported from Dallas to be severely injured and some killed by chiggers.

HENHOUSE BEDBUG (Haematosiphon inodorus Duges)

Missouri L. Haseman (April 25): This insect is generally distributed over Missouri.

FOWL TICK (Argas miniatus Koch)

Texas D. C. Parman (May 19): Quite severe losses have been had in some flocks and the infestations of larvae are at this date the heaviest ever observed. Some houses are literally covered with the migrating larvae at all times of the day under favorable weather conditions.

SHEEP AND GOATS

SHEEP BOT-FLY (Oestrus ovis L.)

New Hampshire P. R. Lowry (April 30): Two sheep in the University herd which died were found rather heavily infested with this pest.

SUCKING GOAT LOUSE (Linognathus stenopsis Burm.)

Texas O. G. Babcock (May 16): At Sonora, Edwards Plateau, this pest is increasing in numbers. It will no doubt be more numerous from now on up to a limiting degree of lousiness. Considerable damage is expected to be done to the spring crop of kids.

I N S E C T S I N F E S T I N G H O U S E A N D

P R E M I S E S

HOUSE CRICKET (Gryllus domesticus L.)

Connecticut W. E. Britton (April 25): This cricket was exceedingly abundant in a basement of an apartment house at New Haven.

CLOTHES MOTHS (Tinea pellionella L.)

New York Roy Latham (May 5): Clothes moths were seen flying in houses on May 5.

TERMITES (Reticulitermes flavipes Kol. and
R. virginicus Banks.)

- Pennsylvania T. L. Guyton (May 19): Inquiries are coming in from several parts of the State.
- Indiana H. F. Dietz (May 19): Ten cases of termite damage to buildings in Indiana have been reported to me since April 27. In five cases specimens of the winged colonizing adults have been obtained and determined as follows: Reticulitermes flavipes, two cases, both from Indianapolis, on April 22 and 25, and one from Franklin on April 25. The other reports are from Richmond, April 28, Dupont, May 6, and North Madison, May 16, but no specimens of identifiable forms were obtainable at the time of inspection, which was several days after swarming took place.
- J. E. Davis (May 22): White ants are continuing their serious depredations, two noticeable cases of injury being reported to us, one April 3, from Hartford City, Indiana, and the other May 21, from LaFayette.

A MIDGE (Chironomus sp.)

- Indiana J. J. Davis (May 22): On May 8 we received chironomid larvae which were reported abundant in a cistern at Salem. Dr. O. A. Johannsen determined the larvae as Chironomus sp. "species closely allied to either decorus or cristatus."

ANTS (Formicidae)

Cremastogaster lineolata Say

- Mississippi M. R. Smith (May 23): Specimens of this ant were received from T. F. McGehee, who states that the ants were taken from the porch of a home in Coldwater, Miss. This species is an occasional house pest in Mississippi.

Pheidole flavens Roger, subsp. floridana Emery.

- Mississippi M. R. Smith (May 19): Workers of this species have been sent in from Ocean Springs. Nothing is known concerning its habits or distribution.

TINY RED ANT (Monomorium pharaonis L.)

- Mississippi M. R. Smith (May 19): The tiny red ant, or "Pharaoh's ant", is widely distributed throughout the State and is a very important house-infesting species.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

- Mississippi M. R. Smith (May 19): The Argentine ant is now known from about 70 towns in this State and there are doubtless other infestations of which we have no record. (May 27): Specimens of the Argentine ant received today from Alfred Lutken of Picayune show sexed forms, eggs, larvae, and pupae present in the nest.
- California W.D. Pierce (May 31): Argentine ant is very bad around the entire Bay Region, especially at Oakland, Alameda, San Francisco, San Mateo and Palo Alto.

. . . Solenopsis geminata Fab. subsp. rufa Jerdon

- Mississippi M. R. Smith (May 19): This subspecies has only been found in one town in this State, Tupelo. Nests are built under the concrete sidewalks or in the soil around the basements of stores and houses. (May 20): The fire ant continues to be the source of much complaint from all parts of the State. Nests are constructed in flower beds, strawberry beds, and yards. The workers are very vicious and sting one on the least provocation. One mother reports that she is afraid to let her baby in the yard because of the stings of these ants.

. . . Tetramorium guineense Fab.

- Mississippi M. R. Smith (May 19): This species has been found at Gulfport, Biloxi, and Pascagoula. It is also a house-infesting species.

LITTLE BLACK ANT (Monomorium minimum Buckley)

- New York Roy Latham (May 5): Black ants were active in houses March 30 and have been exceedingly bad ever since.

. . . Crazy Ant (Prenolepis longicornis Latr.)

- Mississippi M.R. Smith (May 19): This ant occurs at Gulfport and Biloxi, where it infests only a few blocks. It is generally known as the crazy ant, and although infesting stores, houses, etc., it is far from being the pest that the Argentine ant is.

. . . Camponotus socius Roger

- Mississippi M.R. Smith (May 19): This ant is present in Waynesboro and Benoit. It was formerly known only from Florida, but the writer has recently seen specimens in Doctor Wheeler's collections from Georgia, North Carolina, and Alabama. This information tends to show that the ant is becoming distributed throughout the Southern States.

Camponotus fallax Nyl., subsp. rasilis Wheeler)

Mississippi M.R. Smith (May 8): This ant has been found infesting a house in Starkville. The workers show a decided fondness for sweets, such as sugar, sirup, pastries, etc. This species has never been recorded before as a house-infesting ant so far as the writer knows. It has also recently been reported from Louisiana by Mr. T. H. Jones.

... Several species

Mississippi M.R. Smith (May 19): According to their importance as house pests, the writer would rank those infesting houses in the State as follows:

- 1: - - - Iridomyrmex humilis Mayr
- 2: - - - Monomorium minimum Buckley
- 3: - - - Monomorium pharaonis L.
- 4: - - - Solenopsis geminata Fab.
- 5: - - - Solenopsis molesta Say
- 6: - - - Cremastoraster sp.
- 7: - - - Preholepis imparis Say
- 8: - - - Iridomyrmex analis Andreæ

S T O R E D - P R O D U C T I N S E C T S

... BEAN WEEVIL (Mylabris obtectus Say)

New York Leland J. W. Jones (May 15): This insect is reported attacking lima and kidney beans in storage at Bainbridge.

Ohio H. A. Gossard (May 11): On February 17 we received from Cleveland the bean weevil in stored beans. (February 19): The same species was received in beans from Elyria.

... PEA WEEVIL (Bruchus pisorum L.)

Utah Ira M. Hawley (May 14): Much of the seed sold in northern Utah is badly infested.

... CONFUSED FLOUR BEETLE (Tribolium confusum Duv.)

Ohio H. A. Gossard (May 11): On February 7 we received the confused flour beetle from Delaware, Ohio, where it was attacking stored wheat.

... RICE WEEVIL (Calandra oryza L.)

Ohio H. A. Gossard (May 11): On February 7 the rice weevil was sent us from Delaware, Ohio, in stored wheat.

DARK MEALWORM (Tenebrio obscurus L.)

Oklahoma E. E. Scholl (April 30): We have two very interesting reports of the large mealworm infesting sterilized cotton seed shipped into Oklahoma from Texas. The seed, however, was stored in old bins for about six weeks and the chances are that the condition of the seed after being treated was congenial for the larvae of this pest.

A SEED WASP (Megastimus sp., near lasiocarpae Crosby)

Mississippi R.W.Harned (May 18): During April, Mr. E.G.Gwen, a florist at Columbus, Miss., sent to this office a bag of Cedrus atlantica seed that he had received from a firm in Philadelphia, Pa. This seed was infested with insects which were identified by specialists in the Bureau of Entomology as Megastigmus near lasiocarpae, and a species probably new to this country. A letter from the firm in Philadelphia revealed the fact that this bag of Cedrus atlantica seed had been obtained in Europe.

INDIAN MEAL MOTH (Plodia interpunctella Huebn.)

Ohio H. A. Gossard (May 11): We received the Indian meal moth on March 13, from Cincinnati, moths having attracted notice from flying in numbers in a dwelling house.

